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CONTENTS.

	Page.
The Headquarters of the Mining Industry	485
Colorado Manganese	485
Sale of the Mercur Mine	485
Coke Prices and Supplies	485
The Deep Level Mines in the Transvaal	485
Gas Engines	485
Silver Prospects	486
The Transmission of Power in Mining	486
New Publications	486
Books Received	487
The Mineral Industry, Volume III.	487
Selling Pig Iron by Analysis ....J. G. Kennedy	488
The Atlanta Exposition	488
Contributions to the Chemistry of the Cyanide Process—I., E. A. Schneider	489
The Castner-Kellner Electrolytic Process	489
*Plant for the Separation and Disposal of Slag....L. S. Austin	490
Auriferous Beach Mining in Australia	491
*The Marvin Electric Drill	492
Recent Decisions Affecting the Mining Industry	494
Abstracts of Official Reports	494
Patents Relating to Mining and Metallurgy	494
Personal, Obituary, Societies, Technical Schools, Industrial Notes, Trade Catalogues	495
Notes: Gas Explosions in Metal Mines, 488—Ancient Mine Pumps, 488—Swedish Iron Ore Trade, 490—Ancient Roads in India, 493—The Locomotive Industry in Russia, 494.	

* Illustrated.

MINING NEWS:
Alaska 496
California..... 496
Colorado..... 496
Georgia..... 497
Idaho..... 497
Iowa..... 497
Kansas 497
Maine..... 497
Massachusetts.. 497
Michigan 497
Minnesota..... 497
Missouri..... 497
Montana 497
Nebraska..... 498
Nevada 498
New Jersey 498
New Mexico.... 498
New York. ... 498
Ohio..... 499
Oregon 499
Pennsylvania... 499
South Dakota.. 499
Tennessee 499
Utah..... 499
Virginia..... 499
Washington 499

FOREIGN MINING NEWS:
Brazil 499
Br. Columbia... 499
Ecuador..... 499
India..... 500
New So. Wales. 500
New Zealand... 500
Nova Scotia.... 500
So. Africa..... 500

LATEST MINING NEWS 500

MARKETS:

COAL:
New York.... 500
Buffalo 500
Chicago..... 500
Pittsburg..... 501

IRON:
New York.... 501
Chicago..... 501
Cleveland..... 501
Pittsburg..... 501
Philadelphia.. 502

METALS:
Gold & Silver 502
Other Metals. 503

CHEMICALS AND MINERALS.
New York.... 504

MINING STOCKS:
New York.... 504
Boston..... 504
Chicago..... 504
Colo. Springs. 504
Salt Lake City 504
San Francisco. 505
London..... 505
Paris..... 505
Meetings 505
Dividends. ... 505
Assessments.. 505
Oct.. Divid... 505

STOCK QUOTATIONS.
New York..... 506
Boston..... 506
Ind. and Trust.. 506
Coal Stocks..... 506
Pittsburg..... 506
St. Louis..... 506
Colo. Springs.. 506
San Francisco.. 506
Baltimore..... 506
Denver..... 507
Philadelphia ... 507
Salt Lake City 507
Aspen..... 507
Helena..... 507
Duluth..... 507
London..... 507
Paris..... 507
Mexico..... 507
Valparaiso 507
Shanghai..... 507
MINING Co's.... 508

ADVT. RATES. 18
ADVT. INDEX. 17

THE HEADQUARTERS OF THE MINING INDUSTRY.

Visitors find here files of a great number of papers from the mining districts of this and other countries, and books of reference which can be consulted for information on any question in which they may be interested. They can have their letters addressed in care of "The Engineering and Mining Journal," P. O. Box 1833, New York, and will find in the headquarters every convenience for correspondence.

Our correspondent at Leadville notes this week that shipments of a new class will shortly be begun from that camp. The Keno Mine, which has not been worked for some time, has been reopened and arrangements have been made to ship manganese ore from the deposit found in its lower levels some time ago. It is stated that the Illinois Steel Company in Chicago has agreed to take a considerable quantity of these ores. This is another addition to the development of the wonderfully varied mineral wealth of Colorado.

The sale of the Mercur Mine in Tooele County, Utah, to Captain J. R. De Lamar, which is announced in another column, is probably a prelude to the placing of the company's stock abroad, where that of the De Lamar mines in Idaho is held and favorably known. The Mercur Company has attracted attention by its successful development and working of a large deposit of low-grade gold ores. For some time past the mine has been a steady dividend payer. The transfer will be made by the sale of the stock. Captain De Lamar, it is said, has secured an option on nearly all of it at the price of $7.50 per share, at which rate the property would cost him $1,500,000.

The recent large purchase of coal lands and coke plants by the H. C. Frick Company, and the fact that those purchases are on such an extensive scale as to give that company a practical control of the output of the Connellsville region, has given rise to a good deal of conjecture in the iron trade, and in some quarters the apprehension has been expressed that the company will raise prices to a point which will injuriously affect the iron manufacturers by increasing the cost of their fuel. It seems to us that those apprehensions are unfounded. Some increase in prices is possible, and perhaps probable; but it should be remembered that while the greatest output of coke at present comes from the Connellsville region, that district has not by any means a monopoly. Pocahontas coke has already an excellent reputation as a furnace fuel, and other sections of Kentucky and West Virginia furnish coke equal to the best Connellsville coal. Any increase in the price of the Connellsville article beyond a point where a fair profit can be realized will surely be followed by the introduction to the market of coke from other districts. Competition in the coal trade is too keen to permit any opportunity to pass for developing new outlets for business, and we may be sure that any attempt to force the price up to an unreasonable point will only react upon the company or combination which tries it. The Frick Company doubtless realizes this perfectly, and we do not think that there is any occasion for the iron makers to fear an unreasonable increase in the cost of their supplies.

An event in the history of gold mining on the Witwatersrand is the completion of the first of the deep level mines to a point when the extraction and working of ore can begin. This mine is one of what are locally called the first range of deep level mines, in which the reef or banket bed is to be found at a depth varying from 2,000 to 2,500 ft. Preparations have already been begun for sinking shafts for a second range, which will have to go down 3,500 ft. or more to reach the gold-bearing deposits. The location of the shafts and their probable depth is based upon the indications of the dip and direction of the banket beds as given by the diamond drill.

The mine referred to—known as the Geldenhuis Deep Level—has reached the deposit and is reported to have a large quantity of ore already in sight. The shaft is provided with approved machinery, and preparations have been made for working on a large scale, the mill having 100 stamps, with amalgamation and other machinery, and a cyanide plant for working the tailings. Foundations have also been put in for 100 additional stamps. The operations there will be watched with much interest by others who have invested a large amount of money in deep level works. The first telegraphic reports are to the effect that returns are less than was expected, no particulars being given, but too much importance should not be attached to this, as it will require some time to ascertain the real value of the mine.

It is interesting to note that the leading officers and directors of the Pennsylvania Railroad—a company whose readiness to adopt new methods and to make improvements have caused its practice to be studied and copied all over the world—believe that the time has arrived when they may begin to take into consideration the question of using electrica power on their lines. At their request Mr. George Westinghouse, Jr., recently submitted for consideration a memorandum on this subject. The

point in this memorandum to which we wish at present to call attention is the importance which so noted a mechanical engineer attaches to the gas engine as a generator of power. On this subject Mr. Westinghouse says:

"A strong argument heretofore used against the adoption of the electric system for main lines has been due to the fact that the investment required to make the change would be heavy, without materially decreasing the consumption of fuel and other costs of operation, an objection which it is believed can be met by the development and use of gas engines of large sizes, instead of steam engines, for the generation of the electric current.

"During the past 25 years, gas engines of small sizes have been manufactured by the thousands, and some of 350 H. P. have already been made abroad, the manufacturers of which are willing to guarantee a consumption of fuel not exceeding three-quarters of a pound of coal per horse power, when the gas is obtained by means of gas producers of the character commonly employed in iron and steel mills. Taking into consideration the various losses, a locomotive consumes on an average eight times as much coal as would be required to operate a properly constructed gas engine. . . .

"An intimate connection with the gas, electric and engine business for over 10 years, and a constant study of those subjects, have led to the conclusion that gas engines of large power and of greater economy than those above referred to can now be manufactured, and their manufacture in a large way has only to be brought about to create new conditions of the utmost importance to railroad properties."

This opinion comes with especial weight from an engineer who has made the steam motor an especial study, who has devised special types of engines and is now engaged in the manufacture of those engines on a large scale. Mr. Westinghouse has further emphasized his belief in the gas engine by making arrangements to develop those motors and to engage in their manufacture, which is a strong practical testimony to the sincerity of his convictions. Mr. Westinghouse's opinion is also in line with what has been said again and again in the columns of the "Engineering and Mining Journal" concerning the great advantages offered by the gas engines at our mines.

SILVER PROSPECTS

The price of silver continues to be well maintained at about the level which it reached after the speculation of a few months ago subsided. At present there seems to be but little speculation in the metal, and the quotations depend entirely upon the actual demand. That this continues fairly strong is shown by the steadiness of the price, and there is no reason at present to anticipate a serious fall. There has been this year a large decrease—amounting to $13,000,000—in the shipments from London to the East, and this has been only in part made up by an increase of $4,027,000 in the exports from San Francisco direct to China and Japan. While London continues to be the great market, a diversion of the trade current has begun, which promises to be both permanent and important in amount. The Eastern exchanges continue unexpectedly strong, as is shown by the comparatively high price at which Council bills continue to sell in London, the exchange value of the Indian rupee now ranging higher than it has done for a long time.

The element of uncertainty in the market just at present is the disposition to be made of the large sums standing to the credit of the Japanese Government in London. The recent payment in gold of the first installment of about $40,000,000 of the Chinese war indemnity has been followed by the announcement that Japan is to receive at once an additional amount of about $30,000,000 as compensation for the early withdrawal of her troops from Chinese territory. So far the Japanese financiers have kept their own counsel, and no one is able to say what proportion of the money will be used in Europe or how much will be remitted to the East. It is probable, however, that the transfer of whatever is sent to Japan will be managed in such a way as to have little immediate effect upon the market. The Japanese are too keen and acute men of business to force up the price of a commodity which they expect to buy largely, and recent experience has shown that they understand very clearly the currents of European finance and opinion.

The apparent dropping of all steps towards a new currency conference in Germany, and to some extent also the general absorption of public interest and attention by gold mining, and the increasing production of gold has partially removed for the time the coinage question as an immediate factor in the market. We believe, however, that this is only a temporary condition. Bimetallism has not been, and will not be, abandoned by its advocates; and the feeling in favor of an intelligent adjustment of the relations of the money metals and the adoption of an international agreement for that purpose is bound to increase in strength among those who study the question closely, and who have the power and ability to impress their opinions upon others. If these advocates could be brought to agree upon some definite plan—such as the creation of an International Monetary Clearing House—the bimetallic agitation would receive a powerful impetus.

We may add that, while our own information does not point to any decrease in the output of silver in the United States, the large producers of and dealers in the white metal seem to have watched affairs very carefully. There has been no attempt to force stocks on the market, and offerings have, apparently, been limited very carefully to the amounts which could be taken up without breaking the price.

THE TRANSMISSION OF POWER IN MINING.

Several correspondents have lately asked us to indicate the best method of transmitting power to the points when it is needed in mining operations; and the question is one which is constantly recurring. Upon the proper answer much may depend, in some cases even the difference between a small margin of profit and no profit at all, or a balance on the wrong side of the account. While many elements enter into the question of the profitable exploitation of a mine, the selection in the first place and the economical working afterward of the mechanical appliances needed, form one of the most important, in some cases, indeed, the leading element in the problem.

The inquiries which we have mentioned do not refer to the method of generating the power required, but to that of conveying it from the generators to other points. At present there are two systems of transmission prominently presented to the attention of mine owners and operators, each of which finds strong advocates, among engineers as well as in the manufacturers who have, of course, an interest in pressing the sale of their own wares. It may be of interest to sum up the claims presented for each.

For transmission by compressed air, on the one hand we have the advantages of certainty and regularity, of simplicity in machinery, of freedom from the possibility of fatal accidents, and of the assistance given to ventilation and in cooling the workings, in some cases considerations of much importance. Operations with this method do not require the supervision of a specially qualified expert, and the chances of interruption by accident are, it is claimed, less than in any other form of transmission. The use of various improved forms of air compressors has reduced the cost of operating and increased the range of work. In mines where there is heavy hauling to be done the compressed air locomotive has been introduced with excellent results.

On the other hand, the electrical engineers claim the application at the motor of a much higher proportion of the power generated; the greater ease and cheapness presented when the power system can be extended by simply suspending an insulated wire, as compared with the installation of pipes strong enough to sustain high air pressures; the ease with which motors can be moved from place to place and the connections altered or extended; and the wider range of location offered for the main generator.

These claims on both sides have solid foundations in fact, and the decision between them is often a very difficult one. One point which the compressed air advocates have heretofore had in their favor has been the admitted superiority of air-driven drilling machinery; but this is gradually disappearing in view of the improvements which are being made in the electric rock drill.

Apart from these leading systems of transmission, there are some mining operations where a central system for generating power may not be the most economical, and where the establishment of independent generators at different points may be the best practical method. In such cases the use of the gas engine suggests itself as the plan apt to be the most readily adjustable to circumstances and the most economical.

In thus presenting the claims of various systems, we do not appear as the advocate of any one of them, though we recognize the advantages of each. The fact is, that it is impossible to give any general answer to the question submitted to us. Local circumstances and requirements differ so widely that the special features which in one case would recommend the adoption of a certain system, in another might compel its rejection. Without a full knowledge of the local conditions in each case no proper decision can be made, and each should be considered by itself.

We can only say generally that mine operators are fortunate in having so wide a range of choice, and advise them in all cases to take the advice of a competent engineer before coming to a final decision.

NEW PUBLICATIONS.

MODERN COPPER SMELTING. By Edward Dyer Peters, Jr. Seventh Edition rewritten and greatly enlarged. New York and London; the Scientific Publishing Company. Pages 642; illustrated. Price $5.

The first edition of this book, which appeared in 1887, attracted at once, the attention of the professional world, as a contribution of original value to the art of copper metallurgy. Like the works of Howe, Hofman and Kemp, it was neither, on the one hand, the mere translation of a foreign text-book, nor, on the other hand, a mere undigested account of American conditions and practice, but a discriminating and critical presentation of the actual condition of both practice and theory, as personally known to the author under the circumstances of this country and generation. Such works, in the departments of copper, lead, steel and ore deposits were unquestionably needed; for in each of these departments American observers and operators had much to say which would be useful to science and industry everywhere. Economic exigencies had been met by inventive ingenuity in the production of many new methods and devices, some of which were make-shifts, while many others were real improvements. To determine their true value, and the field of their advantageous use, it was necessary that they should be fully and accurately described and discussed; and this was done in such works as I have mentioned, whose authors are now, as a consequence, recognized throughout

the world as not merely authors, but authorities. The appearance of such treatises constitutes the fourth step in the progress of American metallurgy; the three preceding steps, without which such a fourth would have been impossible, having been the establishment of technical journals, technical schools and technical societies, by means of which a corps of intelligent technical workers was created and brought into harmonious activity. The perusal of Dr. Peters' preface, with its abundant acknowledgment of professional co-operation, plainly shows that, without such a company of colleagues, he could not have produced his admirable book. And every one of those who have assisted him will be overpaid by the invaluable comprehensive statement thus made possible to his skillful hand.

The first edition of this book was limited somewhat in scope, and constituted rather an addition to existing treatises than an independent and comprehensive survey of all branches of copper metallurgy. It was rewritten in 1891, and the present edition is again rewritten and greatly enlarged, so that it is more nearly a complete text-book, though it cannot supersede, for students of the history of the art, the works of earlier authors. On the other hand, it may fairly be said, that the history of this art can not be successfully included, now-a-days, in ordinary courses of instruction without omitting the more important exposition of its actual state. It has been said concerning some of our technical schools that the students have listened too much to descriptions of processes now commercially obsolete, and too little to the explanation of those which they will encounter in practice. This disproportion, so far as it has really existed, has been doubtless due to two principal causes: the presence in text-books of many carefully compiled (though now antiquated) data concerning old processes; and the dearth of accessible trustworthy information concerning new ones. Both are removed by such a work as Dr. Peters has furnished; and the professors of metallurgy owe him a debt of gratitude, which will be transferred to a host of students. Yet, it is perhaps the actual workers who will feel the deepest obligation.

But the greatest difficulty in keeping courses of instruction abreast of existing knowledge lies in the rapidity with which discoveries and improvements outrun the best text-books. What is said in one of the modern manuals of electricity, that "there are two sciences of electricity, one in the books and the other in the workshops," may be said with almost equal force of metallurgy. It is fortunate that the rapid sale of previous editions of Dr. Peters' book has given him an opportunity, in the prime of his powers and the fullness of his experience, to re-write the whole. Remembering that it is but eight years since the first edition appeared, we cannot fail to be impressed with the extent to which it has been found necessary to modify and enlarge the work, in order to bring it up to date. But a comparison between the first and the seventh edition does not fully tell the story. For there have been revisions of the first edition meanwhile; and it is within the period of about four years (if I am not mistaken), which has elapsed since the last thorough revision, that the greatest changes in American practice have taken general effect. No doubt the stimulus and aid furnished by Dr. Peters have had much to do with these changes. As he sums them up, they include the success and general introduction of automatic calcining furnaces; the rapid and extraordinary development of the copper Bessemer process; important and far-reaching improvements in blast furnaces and reverberatories; and a general advance in economy, which he ascribes to "the gradual dawning of the idea that, because copper is worth fifteen times as much as iron, it is not absolutely necessary to expend fifteen times as much money in handling and treating its ores."

With regard to the first of these improvements—the increased use of automatic calciners—I venture to remark, in passing, that for close roasting I do not think the economic superiority of such furnaces has yet been demonstrated. Improved construction and practice in the old-fashioned reverberatories, and especially the increase of their length, has made them much more formidable rivals to the mechanical roasters than they were a few years ago. And the advantage of human skill in the manipulation of a charge still counts for a good deal in processes which require exact final results.

Besides the consideration of the new features above mentioned, the book is enriched throughout by the fruits of the autnor's personal study of foreign methods—a most important corrective to patriotic preferences and pride. For it should not be forgotten that our brethren abroad are advancing also, and that their books do not represent the last results of their practice. Even when they have copied from us they have been often competent to better their originals.

Finally, two new chapters have been added to the book, treating of subjects not considered in former editions. The first of these is the chapter on pyritic smelting, contributed by Mr. Robert Sticht, an accomplished and impartial authority in that department. With the exception of the paper of Mr. Herbert Lang,* published last January in the San Francisco "Mining and Scientific Press," this chapter is the first thorough discussion of pyritic smelting which has been presented to American metallurgists. It is preceded by a scarcely less valuable resume of the subject by Dr. Peters himself, in which Mr. Lang's paper is acknowledged and used; and the two chapters, taken together, may be fairly regarded as the best treatise in this department.

Both theoretically and practically, they are extremely valuable and suggestive—not the less so in that they leave the exact commercial field for the application of pyritic smelting to be determined by future experience, and show that such smelting, conducted without the use of any carbonaceous fuel whatever, has not been economically successful on a large scale, whereas "partial" pyritic smelting, with the aid of a hot blast, and the addition of from 1·5 to 5% of coke to the charge, is an assured success, and may be, under proper conditions, the most economical method. In other words, the new process is not a panacea, and does not revolutionize the art of metallurgy, but it is a valuable addition to the metallurgist's repertory of methods. This is exactly what might be expected from a scientific consideration of its claims.

The other new chapter is furnished by Mr. Maurice Barnett, of Philadelphia, on the electrolytic refining of pig copper, a process now so widely employed in Europe and America as to warrant this special consideration. I confess, however, that the introduction of this chapter intensifies my regret that Dr. Peters' work is otherwise silent as to all humid processes in copper metallurgy. A survey of this additional field would have made it complete. But one must appreciate the controlling limitations of space; and whoever would seriously urge the inclusion of another whole class of subjects in this book should be ready to indicate at the same time what could be omitted to make room therefor. And I see nothing in the book which could be spared for such a purpose. The utmost, therefore, which I could wish Dr. Peters to do (unless he wrote another volume) would be, to add to this book a brief statement of the various humid methods, and the economic relation of such methods, as a class, to smelting. I notice in his book but one sentence touching this point, namely, at the beginning of the excellent chapter on the "Selection of Process and Arrangement of Plant," where he alludes to the "very rare conditions where it would be advisable to employ a wet method of extraction—such as a highly silicious ore, carrying a low percentage of copper and no gold or silver, and of which there are, at present, no examples of moment in operation in North America." This allusion might be expanded into a more satisfactory statement of the situation. There are certainly in North America examples enough of such copper ores as it describes; and an explanation of the reason why there are no important operations based upon them would be interesting and instructive. However, it would not affect the advice of Dr. Peters as to the choice of a process; for such a choice is evidently confined, for ores at all suitable for smelting, to processes of that class.

To many a student, already possessed of some earlier edition of this book, the practical question will be, whether it is really necessary or worth while for him to purchase this later one. We are all obliged to face this perplexity with regard to our scientific and professional books. In the present instance, I can give to the practical question a practical answer. Whether one has an earlier edition or not, he must have this one. The new matter in it is worth more than the cost of the book; it cannot be otherwise or elsewhere obtained; and it is indispensable to student and practitioners alike. R. W. R.

*The Scientific Publishing Company has now in press and nearly ready "Matte Smelting: Its Principles and Later Developments Discussed; With an Account of the Pyritic Processes," by Herbert Lang.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

Annual Report of the United States Commissioner of Patents for the Year 1894. Washington; Government Printing Office. Pages, 701.

Poor's Directory of Railway Officials and Manual of American Street Railways. Tenth Yearly Issue; November, 1895. New York; H. V. & H. W. Poor. Pages 74 and 616. Price $3.

Navy Department. Annual Report of the Chief of the Bureau of Steam Engineering. 1895. George W. Melville, Engineer-in-Chief, Washington; Government Printing Office. Pamphlet, pages 18.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
Letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents

"The Mineral Industry," Volume III.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I beg to acknowledge receipt of Volume III. of the "Mineral Industry." I can only reiterate what I have stated before, that it is a most interesting and reliable book, and consequently valuable to every one connected with the mineral industries. M. DUNSCOMB,

BROOKLYN, N. Y., Aug. 16, 1895. Treasurer Chrome Steel Works.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: With regard to the "Mineral Industry" for 1894, I can hardly find words to express my appreciation of its merits, and of the labor and perseverance manifested in the collection of the vast fund of information that it contains. I keep it on my desk for handy reference, not only for my own use but for the use of others who so frequently apply to me for information on matters that are treated of in its pages.

JOHN STANTON,
Secretary and Treasurer Atlantic Mining Company.

NEW YORK, Sept. 3, 1895.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I have just received Vol. III. of the "Mineral Industry" and find it, as I have the previous volumes, full to overflowing with the very latest information upon all subjects pertaining to mining and metallurgy. I would not do without this annual for double its cost. This publication has filled a "long felt need" in collecting annually the advances made in mining and metallurgy and placing them before the world, and more especially before the student, who was heretofore been compelled to depend upon text books, which, as a rule, are quite antiquated.

WILBUR C. KNIGHT,
Professor of Mining and Geology, University of Wyoming.

LARAMIE, Wyo., Oct. 3, 1895.

Selling Pig Iron by Analysis.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The editorial in the last number of the "Journal" on "Selling Pig Iron by Analysis" is most interesting and instructive. This question has been discussed at intervals during the last few years and it is encouraging to those who believe in rational methods to note that much progress has been made in this movement, especially during the last two years. In the Birmingham district iron is largely sold under guaranteed analyses and much earnest and valuable study has been given this subject by Dr. Wm. B. Phillips, of the Tennessee Coal, Iron and Railroad Company, who has called attention to the fallacy of trusting to fracture and color only as exponents of chemical percentages. At several Virginia furnaces all pig iron shipped is accompanied by analysis if so desired, and

many plants working on Lake ore mixtures sell by analysis. Several years ago the writer piled the different casts in the furnace iron yard according to silicon contents within narrow limits of variation. It did not prove a more expensive method of handling iron and was a valuable aid in shipping.

But even with our present knowledge and experience the fact remains that too much prominence is given to grade and that the laboratory is used more in searching for irregularities and unusual combinations in pig-iron analyses than as a constant check on the daily output and a guarantee as to the regularity of shipments.

Every furnaceman can multiply instances of surprising discrepancies between the expected analysis as indicated by fracture and the true chemical composition. A dark colored strong No. 1 foundry iron, made apparently under the same conditions, will sometimes unaccountably show lower silicon than No. 2 or No. 3 foundry. An iron which the grader has put out as No. 1 soft, will be found to contain more silicon than No. 2 soft or even silver gray. There will probably be interesting differences in graphitic carbons and gray forge will show superior analysis to No. 3 foundry. But in a few days the trouble is over and everything is moving smoothly. The chemist no longer looks mysterious, the grader talks with confidence of silicon in softeners and the founder has his faith restored in the efficacy of grain and fracture. But unless the iron is carefully checked by daily analysis of representative samples from the different casts the inevitable trouble with shipments will happen with greater or less frequency.

Dr. R. W. Raymond, in discussing the paper of Mr. William H. Morris, "The Control of Silicon in Pig-Iron"—Transactions Institute of Mining Engineers, XXI, 261, aptly defines the blast furnace as "An apparatus noted as perhaps at once the rudest and the most sensitive of the means employed in manufacture on a large scale. In proportion to its rudeness and sensitiveness it has always called for exceptional skill in management" Might not the actual working of the blast furnace be called the equation of the variables to produce? To produce daily a large product, uniform in physical and chemical requirements, from sources varying but slightly, it may be, individually, but in embarrassing amounts in the aggregate, is the great metallurgical triumph of the age. And this successful modern practice is rendered all the more difficult by the large quantities of stock used daily, the continuous nature of the operation and the necessity of trusting some of the most important features of the process to men who are largely without oversight. It may be noticed, in passing, that our present barbaric methods of handling stock and output at our blast furnaces are being improved upon. If we take the stock-house side of the question it would be a great boon to the furnaceman to be always sure that the stock was filled, weighed and distributed as ordered. Larger furnaces, wider hearths, reserve heating surface at the stoves, ample blowing power, a more regular burden, together with the chemical and metallurgical knowledge necessary to combine the different elements to insure the best results; all these are the aids which enable the skilled furnaceman to combat irregularities and insure a successful campaign.

Looking at the question of grade and analysis from another standpoint, it cannot be denied that irons made in different districts have their well-known peculiarities. A hard, silvery coke and easily reducible ore mixture, low in silica, will make handsome, dark-colored foundry irons, with large crystals and regular grain; but the silicon will be low. Some of the best-looking No. 1 Foundry ever seen by the writer was made in the Pittsburg district from Connellsville coke and Lake ores, but the highest silicon was 1·45%, and the iron would have proved an entire failure in the foundry if charged with the duty of carrying scrap in amounts proportioned to its good appearance. In southwest Virginia there has been considerable trouble in getting sufficient silicon in the No. 1 Foundry. The irons were especially adapted to machine and pulley work, but any attempt to run the silicon high would immediately brighten the foundry irons, although the percentage of silicon would be no higher than other standard brands of dark color.

The eye is a poor guide in judging the composition of irons made from different burdens and under unlike conditions. Too often physical causes influence the grade. It makes quite a difference in the appearance of the cast whether the iron ran rapidly into the beds or not. If the beds are filled slowly, the contact with the damp sand seems to retard the separation of graphitic carbon. Some furnacemen refuse to notch the patterns with the idea of breaking the iron easier, because of a real or fancied change in the grain at the point of breaking. It is for the effect on grain that the introduction of chill molding has been so slow. In Germany the greatest proportion of the iron made is cast in chill molds, and purchasers are given sand molded castings or samples, as indications of the true appearance of crystal and grade.

The larger foundries, the malleable iron trade, the stove men, have all proved the value of the chemists' services. Even the smaller foundries have learned to sort and grade their scrap and appreciate the benefits of softeners. But the truth remains that for the last 25 years we have neglected pig iron in our efforts to learn something about steel. Now the furnaceman and the foundryman must work harmoniously together in the search for knowledge. And between them they might give the average pig iron salesman some practical information—provided he does not know it all!

A certain foundry made a trial of Alabama No. 1 soft, in its mixture with great advantage. The new iron helped correct shrinkage and increased the percentage of scrap carried, and so a larger quantity was ordered. But now something went wrong in the foundry. The new mixture worked "dirty," would not carry the same weights of scrap, and thin castings showed a chill edge. Fortunately a small amount of the original shipment was still on hand which afforded means for chemical comparison. The percentages of manganese, phosphorus, sulphur and graphitic carbon were identical, within the narrow limits of variation. But the silicon was 0·3% higher in the first shipment than in the last. Yet the grader had done his part well—there was the same bright fracture, "the ring around the edges and the big grains in the center." The iron was all No. 1 soft by grade. How much more sensible it would have been for the purchasers to state candidly that an iron of a certain chemical composition suited their purposes, and that they were in the market for a given amount? The above instance is only one of the many disputes between the buyer and seller.

By grading and sorting, foundry scrap is a fairly uniform material. Many foundries use no scrap, combining various irons to suit their demands. It has been shown that, for certain purposes, castings of given chemical composition are satisfactory. The combination of various irons and scrap to give the calculated chemical constituents in the castings, should not prove difficult, provided we know what we are using. Losses in melting, the protection afforded silicon by manganese and the intimate relations of silicon and graphitic carbon, are all subjects familiar to the intelligent founder. The great point to be gained is to secure accurate knowledge of what constitutes satisfactory pig iron and to insist on having shipments made by analysis.

JOHN S. KENNEDY.

CHAMBERSBURG, PA., Oct. 12, 1895.

THE ATLANTA EXPOSITION.

Written for the Engineering and Mining Journal by our Special Correspondent.

In the petroleum exhibit the oil-bearing rocks from Pennsylvania, Ohio, West Virginia, Indiana, and New York are represented by specimens. The crude petroleum is exhibited in specimen bottles from the following places:

Kentucky.—Otter Creek, Wayne County; Old American Well, Burkesville, Cumberland County; Black Log Creek, Martin County; Boyd Creek, Barren County; Cedar Tract, Pikeville, Honey Well, Wayne County; Adam's Well, Barren County.

Texas.—Nacogdoches County; Corsicana, Navarro County; Lockhart, Caldwell County, and Brownsville.

Kansas.—Specimens from Neodesha, Wilson County.

Alabama.—Specimens from Hartsell.

Indian Territory.—One specimen (locality not noted).

Louisiana.—Specimen from Calcasieu Parish.

West Virginia.—Specimen from Volcano, Wood County; Ritchie Mine, Ritchie County; Dott County, Turkey Foot Pool; Wellsville Pool, Hancock County; Sistersville Pool, Taylor County; Burning Spring, Wirt County; French Creek Pool, Pleasant County; Big Indian Oil Pipe Line; Mannington Pool, Marion County; Eureka, Pleasant County; Cake's Run Pool, Monongahela County.

Recently an exhibit from the State of Texas has been added to those from the other States in the Mineral Building. In this are shown typical specimens of the silver-lead ore from the Trans-Pecos region. Coal is represented from the tertiary formation at Santa Tomas, near Laredo; from the carboniferous formation at Rock Creek, Parker County, and from the cretaceous formation at San Carlos, Presidio County.

The building stones of the State are represented in cubes, which include the opal granite from Baby Head Mountain, as well as ordinary gray fine grain granite from Burnett and Llano counties, and the serpentine also from Llano County. The limestone belonging to the cretaceous formation, the red sandstone from near the Pecos River, and the sandstone from the carboniferous formation at Millsap Wells, are also represented. One portion of the exhibit is occupied by the rare minerals found at Barringer Hill, Burnett County, among which are specimens of yttrialite, cerite, fergusonite and gedolnite. Specimens of strontianite and calcite from Mount Bunnel, near Austin, are also included in this exhibit. The lime of the cretaceous formation at Eagle Pass, as well as the cement-making materials; chalks, marls and cement rock from near Austin are represented.

In the space devoted to the exhibit of Tennessee minerals in the Mining Building has recently been placed a large case containing an exhibit installed by the Ducktown Sulphur, Copper and Iron Company, of Isabella. In this are shown specimens of the oxide ores; ore containing galena; of gneiss, hornblende and mica schist occurring in the mines; the principal constituents of the ore, pyrrhotite, chalcopyrrhotite, quartz, and calcite; wall rock of gneiss, mica schist, hornblende, chalcopyrite and pyrrhotite in gangue, calcite, quartz, and lighter varieties of pyroxene and amphibole; chalcopyrite and peacock copper; garnets found in the vein; quartz crystals found in pockets in the vein; metallic copper found in the vein near gossan; graphite found in vein; black ore, 19% copper; ore from crusher; roasted ore from roast yards; float quartz used for flux; product 50% copper matte; by-product slag and flue-dust.

The gossan iron ore mined from the Isabella Mountain, which is being shipped to the Tennessee coke furnaces, is represented by a small pyramid of lumps showing the average run of the mine.

Gas Explosions in Metallic Mines.—M. Lodin, chief engineer of the Pontpean mines in France, recently presented to the Society of Mining Engineers notes on escape of gas in these mines, from which several accidents resulted. The mines are worked for their ores of galena, blende and pyrite. To some extent the formation of the gases might be attributed to the decomposition of the timbers, but this is not a sufficient explanation, and the examiners were forced to admit that in some cases the mineral and the surrounding gangue were impregnated with hydro-carbons at an epoch probably contemporary with the formation of the deposit. The decomposition of organic matters may also have had some effect and have led to the production of gaseous hydro-carbons, the presence of which is frequently detected in working the veins.

Ancient Mine Pumps.—In a note recently read before the French Society of Civil Engineers, M. Vieira said that the working of the iron mines of Chateauverdun, in l'Ariege, dated back to the fourteenth century. Recent explorations have uncovered the ancient works, and in them were found the remains of pumping machinery described in the book of Dietrich on the Mines, Forges and Salt Works of the Pyrenees, published at Paris in 1786. Other similar machines have been found, some of which were in a fair state of preservation. The pumps were of wood and the pistons were packed with leather. The complete installation seems to have included 35 or 36 pumps, of which 21 had been found. The pumping had been performed by man power. Each pump was provided with levers worked by four men, so that when the whole installation was at work it must have taken 144 men to operate it. At present this ancient plant is replaced by a single pump of the plunger pattern, 0·18 meter in diameter, and 1·20 meters stroke, working under a head of 42 meters.

CONTRIBUTIONS TO THE CHEMISTRY OF THE CYANIDE PROCESS.—I.

Written for the Engineering and Mining Journal by E. A. Schneider.

The excessive consumption of potassium cyanide in the cyanide process is generally attributed to three causes.

1. To the insufficient neutralization of acid ores.
2. To the oxydizing action of the oxygen of the air.
3. To the decomposition of the cyanide by the carbonic acid of the air.

It is hardly necessary to dwell on the first of these causes. Practical cyaniding men are sufficiently acquainted with this question.

On the other hand, the actions of the oxygen and of the carbonic acid of the air on cyanide solutions have received a smaller degree of attention than they really deserve. For this reason a series of experiments has been carried out in this direction. A brief abstract of the results so far obtained is given below.

ACTION OF OXYGEN ON CYANIDE SOLUTION.

Some time ago MacLaurin conclusively showed that cyanide solutions absorb oxygen, and that the maximum of absorption is attained by dilute solutions of a certain strength. The question, however, whether at the same time any cyanide is oxidized to cyanate has not been investigated by this chemist. To obtain some light on this question the following experiments were undertaken:

In order to ascertain the effect of dilution on the expected oxidizing action, solutions containing (1) about 0·25% KCy; (2) about 1% KCy; and 3) about 10% KCy were prepared. In the first and second case 50 cc. of the solution, in the third case 10 cc. were enclosed in a tightly sealed bottle holding 300 cc. Thus in the first and second case 250 cc., in the third case 290 cc. oxygen were used.

According to the equation:

$$K\,Cy + O = K\,Cy\,O$$
$$65 + 16 = 71.$$

250 cc. Oxygen, weighing 0·35745 grm. (B = 760 mm. t = 0°) are sufficient to convert 1·4521 grm. potassium cyanide into potassium cyanate; consequently a large excess of oxygen was present in every experiment. In one series of experiments the bottles were exposed to the sunlight, in another series they were kept in the dark.

The following results were obtained:

Bottles Exposed to Sunlight May 28th to June 4th.

I. 50 cc. contained	May 28th	0·1150 gr.	K Cy	(About 0·25% solution).
" "	June 4th	0·1118 "	"	(Loss of 2·78% K Cy).
II. 50 cc. contained	May 28th	0·4576 "	"	(About 1% solution).
" "	June 4th	0·4563 "	"	(Loss of 0·93% K Cy).
III. 10 cc. contained	May 28th	0·9230 "	"	(About 10% solution).
" "	June 4th	0·9022 "	"	(Loss of 2·25% K Cy).

Bottles Kept in the Dark May 28th to June 4th.

I. 50 cc. contained	May 28th	0·1150 gr.	K Cy	(About 0·25% solution).
" "	June 4th	0·1137 "	"	(Loss of 1 13% K Cy)
II. 50 cc. contained	May 28th	0·4576 "	"	(About 0·21% solution).
" "	June 4th	0·4576 "	"	(No loss).
III. 10 cc. contained	May 28th	0·9230 "	"	(About 10% solution).
" "	June 4th	0·9230 "	"	(No loss).

It is evident that in both series of experiments the most dilute solutions were acted upon most strongly by the oxygen. This was naturally to be expected, as, according to MacLaurin, weak solutions of cyanide absorb oxygen more readily than concentrated solutions. In the experiments of the first series the higher temperature, as produced by exposure to the sunlight, also probably played a part.

The conclusions which may be drawn from these experiments are the following:

1. That oxygen oxidizes cyanide of potassium to cyanate.
2. That this oxidizing action is not so energetic as frequently assumed.
3. That dilute solutions are more easily oxidized than concentrated ones.

To determine the amount of potassium cyanide which was converted into cyanate the solutions were titrated in the usual manner with silver nitrate before and after treatment with oxygen. The presence of potassium cyanate does not interfere with the silver nitrate titration, as the following experiments show: 50 cc. KCy solution required 42 cc. $\frac{n}{10}$ $AgNO_3$, contained, therefore, 0·5460 g. KCy; 50 cc. KCy solution + 25 cc. KCyO solution (1% solution) or 0·5460 g. KCy + 0·2500 g. KCyO required 42 cc. $\frac{n}{10}$ $AgNO_3$ solution: 50 cc. KCy solution + 100 cc. KCyO solution (1% solution) or 0·5460 g. KCy + 1·000 g. KCyO required 42·3 cc. $\frac{n}{10}$ $AgNO_3$ solution.

The small excess of silver nitrate solution consumed in the second experiment is probably due to the presence of ammonia in the cyanate, which is almost unavoidable unless the salt is very recently prepared.

DETECTION OF SMALL QUANTITIES OF POTASSIUM CYANATE IN POTASSIUM CYANIDE.

Up to this time no method has been known for the rapid and accurate qualitative detection of small quantities of cyanic acid in potassium cyanide. And still a good qualitative test for cyanic acid in presence of a large excess of hydrocyanic acid is very desirable. Lately, while I was engaged in carrying out some experiments pertaining to the behavior of cyanide solutions toward oxygen, the necessity for finding such a reaction became imperative.

In a paper, headed, "Contributions to the Knowledge of the Double Compounds of the Pentavalent Nitrogen," Blomstrand* gives the following description of the cobalt-salt of cyanic acid, $Co(CNO)_2 + 2\,KCNO$: "When a solution of potassium cyanate is mixed with acetate of cobalt, the solution becomes intensely blue; gradually dark blue crystals of the salt $Co(CNO)_2 + 2\,KCNO$ separate out."

It was obvious that this blue coloration, which is indeed very brilliant, could be used for the detection of cyanic acid, and, above all, that a method of separation for cyanic and hydrocyanic acid was possible, taking into account the difference in the solubility of the cyanide and cyanate of cobalt. It was found, however, that on one side the cyanide of cobalt frequently comes down as a slimy precipitate, which is hard to filter, and that, on the other hand, the reaction for cyanic acid in the filtrate becomes indistinct. Further, it was noticed that the intensely blue color of the solution disappears entirely on dilution with water, but increases most remarkably in brilliancy on addition of alcohol. It was also observed that the reaction is much sharper if acetate of cobalt is used instead of nitrate of cobalt.

It is not possible to detect less than 1 gr. potassium-cyanate in 100 cc. aqueous solution by using cobaltic nitrate; with acetate of cobalt, however, the blue color is quite visible in an 0·5% solution, particularly in larger quantities of liquid. If alcohol of 90% to 95% is used as solvent, 0·0033 gr. potassium cyanate can be detected in 100 cc. liquid with acetate of cobalt.

The reaction for cyanic acid with cobalt salts is interfered with by the presence of small quantities of potassium cyanide. For this reason a merely rough separation of cyanate and cyanide by means of alcohol would not be sufficient. The small quantity of potassium cyanide which remains in the alcoholic solution is sufficient to interfere with the cobalt reaction.

The following method answers all purposes: The potassium cyanide solution, which is to be tested for cyanic acid should be as concentrated as possible. Through this solution a rapid current of carbonic acid is passed until all cyanide is decomposed and all hydrocyanic acid is driven off. The so-called "Zehnkugelröhren" (ten-bulb tubes), which are frequently used in German laboratories, are admirably fitted for this purpose.

It is possible to decompose 3 g. potassium cyanide in a 10% solution within 45 minutes.

To the remaining solution a sufficient quantity of 95% alcohol, in doubtful cases absolute alcohol, is added in order to precipitate out the potassium carbonate, which has been formed by the action of carbonic acid on the cyanide. As the alcoholic filtrate contains always a small quantity of potassium carbonate, a few drops of acetic acid are added before testing with acetate of cobalt.

Whenever the necessity presents itself of testing a considerable quantity of potassium cyanide for very small quantities of cyanic acid, the following method should be adopted: The cyanide is dissolved in as little water as possible. Most of the cyanide present is precipitated out by absolute alcohol. Through the alcoholic solution, which has been filtered off from the potassium cyanide, carbonic acid is passed to decompose the cyanide which it still contains. The potassium carbonate, which is formed as filtered off, and the filtrate can now be tested with cobalt acetate. Sometimes an addition of more alcohol and passing of more carbonic acid through the solution is advisable. Gentle heating of the alcoholic solution while carbonic acid is passed through it accelerates the removal of hydrocyanic acid, but is not advisable. By following these directions it is possible to detect from 1 to 0·35 parts of potassium cyanate in 100 parts of potassium cyanide.

It can be easily seen that the sharpness of the reaction depends largely on the initial volume of the aqueous solution which is to be tested. The more concentrated this solution, the more concentrated the alcoholic solution of the cyanate, and the more decisive the test with cobalt acetate will be.

(To be Concluded.)

*"Journal für Practische Chemie" [2] 3, 206.

THE CASTNER-KELLNER ELECTROLYTIC PROCESS.

The Castner-Kellner Alkali Company, Limited, has been incorporated in England, with a capital stock of £300,000 in shares of £1 each. The directors are Frederick Burton, Hamilton Y. Castner, Frank Hardcastle, Carl Kellner, William Mather and Sir Henry E. Roscoe. The company invites subscriptions for 200,000 shares, and has issued a prospectus which states that, in view of an arrangement between the Aluminum Company Limited, of London, which owns the Castner patents, and Solvay & Cie, of Brussels, who are, by purchase, the sole owners of the Kellner patents, save for Austria, this company has been formed for the purpose of working the combined patents of Mr. Hamilton Y. Castner and Dr. Carl Kellner, for the manufacture of caustic alkali and bleaching powder by means of the electrolytic decomposition of salt or alkaline salts.

In evidence of the value of these patents and processes it is stated that the Mathieson Alkali Works have erected at their own cost an extensive plant for the working of the Castner process in America, and that an agreement has been entered into between that company and the Aluminum Company, Limited, for the purchase of the Castner patents in the United States for the sum of £65,000, payable £30,000 in cash and £35,000 in shares, together with substantial royalties to be paid upon the completion and satisfactory running of the plant and the production of certain specified results. A syndicate has also been formed in Austria, "Consortium for Electro-Chemical Industry," for the working of the Kellner process, the works for which are now being erected at Golling, near Salzburg. The Castner process is being worked on a commercial scale at the works of the Aluminum Company, Limited, at Oldbury, near Birmingham, where a plant of 100 H. P. has been erected for the purpose of demonstrating the successful production of caustic soda and chlorine. This plant has been inspected by many experts, and the process, with but two or three interruptions, has been in continuous operation since August, 1894. It has not only completely verified the anticipations formed of the success of the process and received the approval of all who have witnessed the plant in operation, but, by the practical results obtained, has led to the various arrangements and business developments which are set forth above. It has thus been possible to ascertain by practical experience the figures relating to the cost of manufacture on a large scale, as well as the quantity and quality of the products.

The distinctive features of this electrolytic process as claimed to be proved by the operations at Oldbury are stated as follows: The electrical efficiency is between 88 and 90%, and is beyond anything heretofore attained. The quantity of salt decomposed is so high in proportion to the consumption of electrical energy, as to leave little room for any improvement in this direction. The working of the process is for the most part automatic, and requires but a very limited amount of labor. The alkali solutions produced contain 20% of caustic and yield by direct evaporation solid caustic of almost chemical purity (78·5% Liverpool test), a product to this time unknown in the alkali trade. The cells, which are of an entirely novel construction, are only one-fifth of the size of cells heretofore suggested for other electrical processes, while individually yielding a larger product for a similar expenditure of power. The wear and tear of apparatus, anodes and machinery, is but slight, and forms but a small

percentage in the cost of manufacture. Suitable sites for works are under consideration; when one is selected, it is intended to proceed with the erection of plant by successive electrical installations, each complete in itself, up to 4,000 H. P., the estimates of cost of which, including reasonable contingencies, will amount to a total outlay of £150,000. This plant is calculated to produce 18½ tons of pure caustic soda and 40 tons of bleaching powder daily. The process is a continuous one, and if worked for 340 days a year, the annual output would be 6,300 tons of pure caustic, and 13,600 tons of bleaching powder. There is now manufactured in Great Britain upward of 160,000 tons of caustic soda and 150,000 tons of bleaching powder per annum.

It is estimated, from the figures obtained during the working of the Oldbury plant, that, with the advantages of a more favorable situation for the new works as to supply of fuel, salt, lime, water, etc., pure caustic soda can be reduced at £4 5s. per ton, including 6s. for drumming, and £3 per ton for bleaching powder, including 15s. for barreling.

The contract of sale, dated October 21st, 1895, is made between the Aluminum Company and the new company, and provides for the purchase of the patent rights as before stated, and the benefit of the agreement with Messrs. Solvay & Cie (except as to Canada and the right to receive the sum of £5,000) for the sum of £125,000, payable £25,000 in cash and £100,000 in stock.

Swedish Iron Ore Trade.—The exports of iron ore from Sweden during the nine months ending September 30th, were 664,464 long tons; a reduction of 85,265 tons as compared with the corresponding period in 1894. This decrease is the more remarkable as the Swedish iron ore production and exports have been showing an increase for several years.

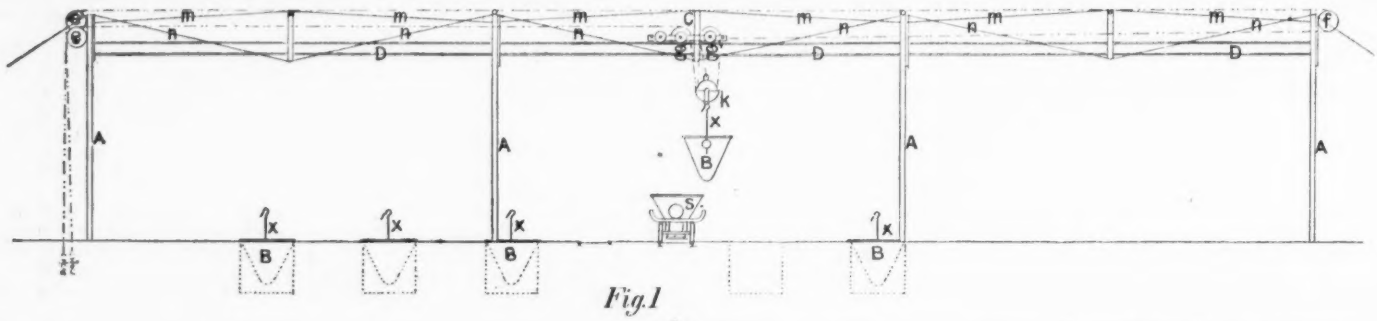

Fig.1

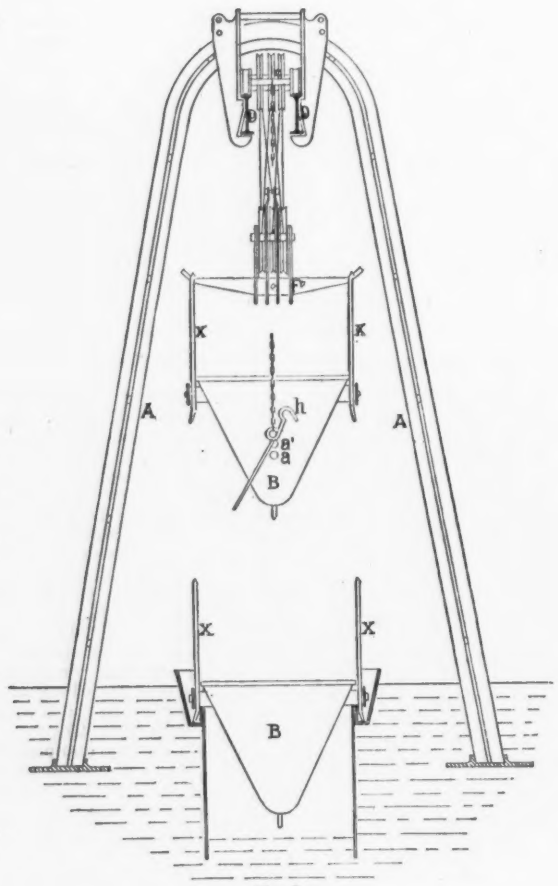

Fig.2

PLANT FOR THE SEPARATION AND DISPOSAL OF SLAG.

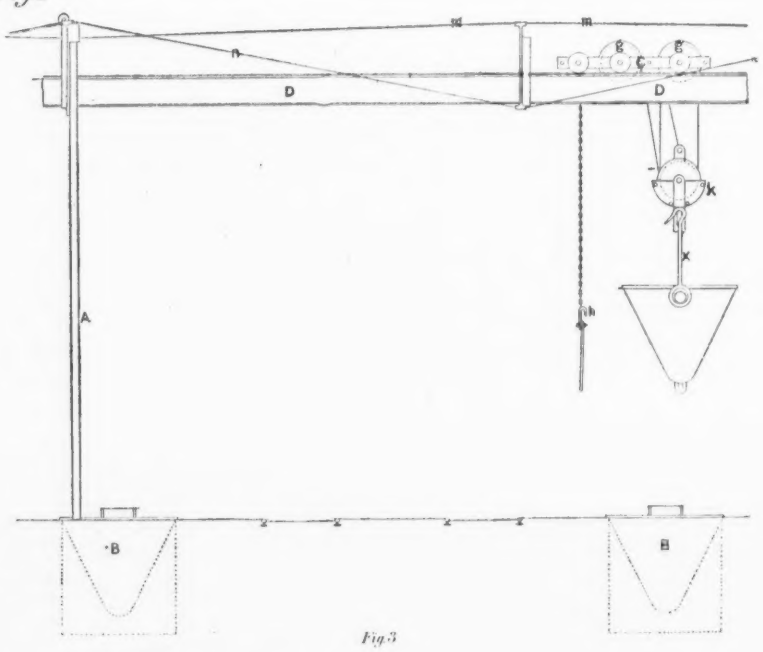

Fig.3

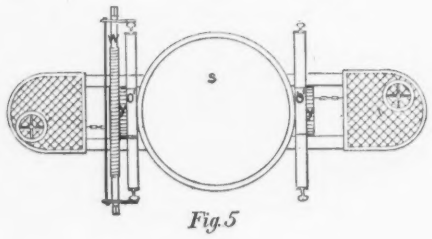

Fig.5

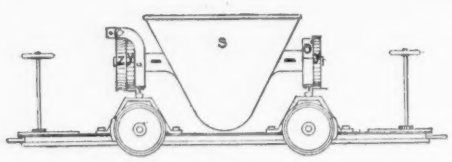

Fig.6

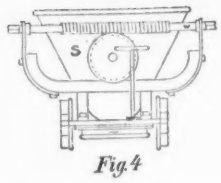

Fig.4

PLANT FOR THE SEPARATION AND DISPOSAL OF SLAG.

Written for the Engineering and Mining Journal by L. S. Austin.

The plant for the separation and disposal of slag, which has been in use for nearly two years at the works of the Omaha & Grant Smelting and Refining Company in Denver, Colo., was devised and successfully operated by Mr. Chas. D. Livingstone, the able metallurgist of these works. It includes not only the separating arrangements, but also the car which removes and disposes of the rejected slag of all the furnaces. This plant is fully shown in the accompanying illustrations.

A series of 5 pits (5 ft. diameter and about 5 ft. deep) are disposed in line beneath the overhead track and receive 5 large separating pots (D, D, D, D, D), each pot being capable of containing 4 tons of matte and slag. These pots are successively filled from the blast furnaces adjacent, the slag being conveyed and poured into them by means of the ordinary slag pots, whose shells, formed in consequence, are reserved for remelting. Each separating pot, when quite full, is allowed to stand and settle for 10 or 15 minutes to allow the contained matte to properly settle out. To the trunnions of the separating pots are attached lines (x x), by which they may be raised or inverted. The overhead traveling carriage or trolley (C) is now brought into operation and the cross-bar F hooked on to the links (x x). The pot is raised and traversed to command the slag car S. The contents of the pot are now tapped off by a hole 2 in. in diameter marked a or a^1, Fig. 2, situated at a point just above the level of the matte in the pot. The slag pours forth freely into the slag-car pot, which holds about 3 tons. The pot still retaining the matte is moved to where a large slag pot holding 1,000 lbs. stands, and into it the matte is tapped by means of a hole provided at the lowest point of the pot. Any

little slag, still remaining above the level of the matte and below the first tap-hole, follows, forming a layer on top of the matte cone, and is separated for resmelting. Finally the pot is traversed to near the end of the overhead track, and is hoisted until the hook h, which hangs from the carriage, can be inserted in the staple at the bottom of the pot. The pot is lowered, turning on its trunnions, and the shell of slag slips out upon the ground. The pot is again hoisted, unhooked, and returned to its pit ready for filling in its turn. Meanwhile the slag car (of which there are two) is run to the edge of the dump. A socketed crank handle is now applied to the squared end of the worm shaft, w, Fig. 4, and the pot turns and rolls on its trunnions to the right or left as may be desired, so that the slag pours out clear of the track. When the pot has been quite revolved upon its side, a slight blow upon the pot causes the shell to slip out. The pot is returned to position, a shoveful or two of dry clay thrown into it, and it is ready to return for refilling.

In the following explanation of the drawings, the same letters refer to the same parts in all the figures: Fig. 1 is an elevation showing the general arrangement; Fig. 2 an end elevation, and Fig. 3 a side elevation of overhead traversing crane; Fig. 4 an end elevation, Fig. 5 a plan, and Fig 6 a side elevation of the slag car. The references are as follows: A A, frames or legs of crane, made of 60-lb. rails; B B, separating pots; C, traversing carriage or trolley; D D, I-beams 15 in. deep, forming the overhead track; F, cross-bar by which separating pots are handled; S, slag car pot; a, a^1, slag-tap holes of separating pot, the hole used depending upon the level of the matte in the pot; e, e , shieves for changing direction of the hoisting ropes and connecting to hoisting engine; f, shieve at opposite end of frame; g g^1, shieves or trolley; h, hook for dumping separating pot, which is suspended from the trolley by a chain; k, movable block; m, m, m, transverse tie rods for stiffening track; n n, tie rods for stiffening track; o' o', wheels of trunnion rolling upon supporting frame of slag car; w, worm shaft for revolving pot by means of worm wheel, z; x x, hooked links for suspending separating pots; y, y, gear wheels meshing into racks attached to supporting frame of slag car; z, worm wheel operated by worm shaft, w. Fig. 7 is from a photograph, showing a general view of the plant in operation.

The surface which intervenes between the furnaces and the crane is covered with iron plates over which the slag pots, holding 800 lbs. each, can be easily moved by one man. Upon this surface is also dumped the slag shells, which, upon cooling, are shoveled up and removed. The plant, as here shown, can take care of a number of furnaces, having a capacity of 350 tons per day. There are needed on each shift one man to operate the hoisting engine, one tapper, a driver and mule, and a man at the end of the dump. In addition to this must be provided the usual force for breaking and handling the slag and matte.

The system has a great advantage over most others, that sufficient time is given for the settlement of the matte, so that none of it shall be carried away. In the small amount of slag returned to the furnaces, it compares favorably with other systems, especially when we remember that the working of the furnace is improved by the return of a sufficient quantity of slag. The delivery of so large an amount of slag at the end of an extended dump, which here exists, is very cheaply performed. There is also an undoubted advantage in keeping the space immediately in front of the furnaces cool, and also free and clear of any separating device whose attendance and care demand additional labor.

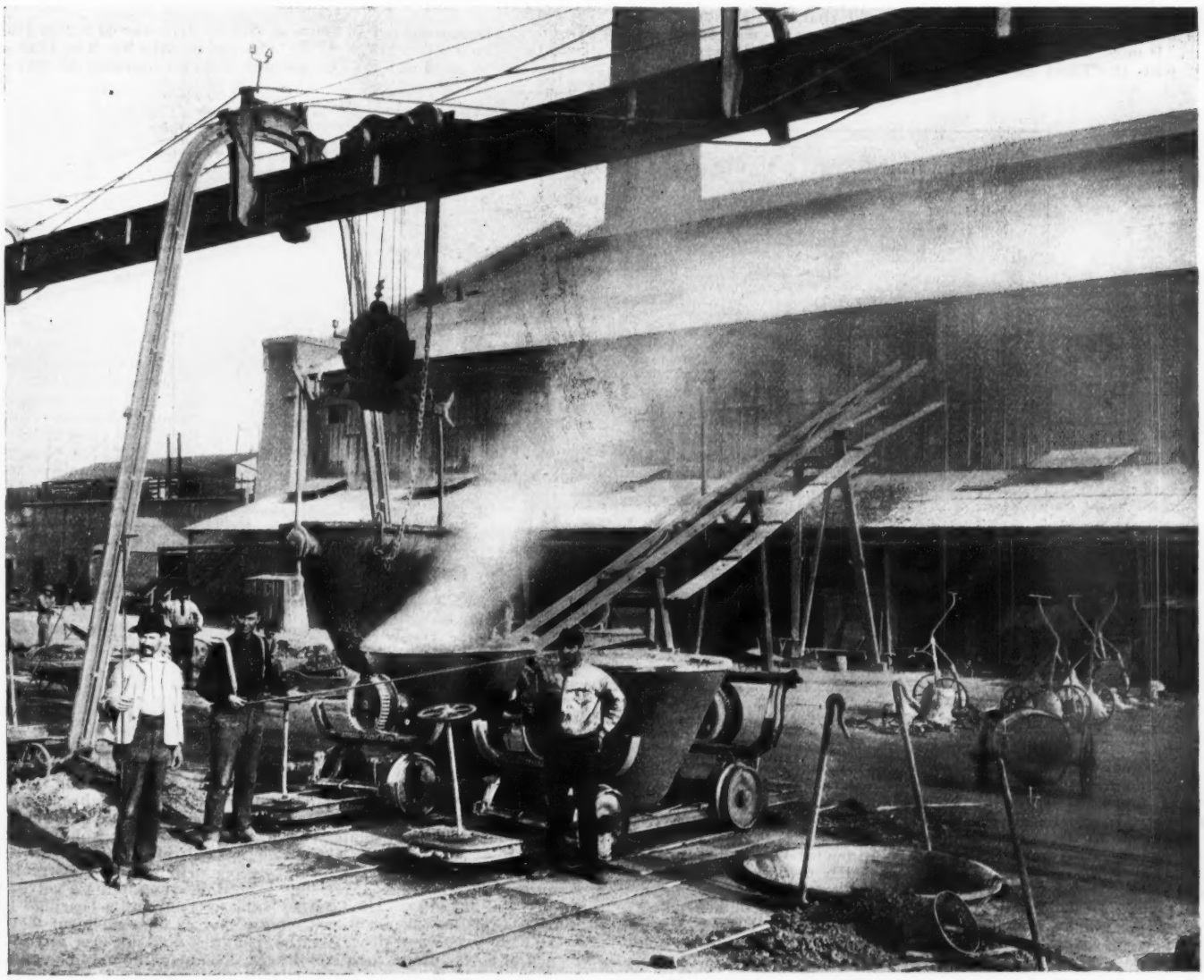

FIG. 7.—PLANT FOR THE SEPARATION AND DISPOSAL OF SLAG.

AURIFEROUS BEACH MINING IN AUSTRALIA.

A considerable portion of the New South Wales coast, north of Newcastle, is largely auriferous, and for many years numbers of people have been regularly employed in extracting gold from the sand, both from the beaches and from the natural terraces at their back, the principal scene of operations being confined to that portion of the coast between the Clarence and Tweed rivers. Gold is found on other parts of the coast, both north and south of Sydney, but rarely in payable quantities. The beach miners appear to derive a comfortable living from their labors, but the exact amount of metal cannot be ascertained, because a considerable portion of the miners have a migratory tendency, not remaining long in one place; consequently, many parcels of amalgam are taken elsewhere and included in the returns from other districts. The Sydney Mint returns show, however, that something like 3,400 oz. were received during 1894 from the coast between Byron Bay and Iluka. The gold on the beaches is more plentiful after violent storms, and at such times the miners are actively employed. The busiest scene is perhaps that afforded by the Seven Mile Beach, near Byron Bay, where, according to a recent visitor, many men are engaged on a line of reef at low tide, scooping up the black sand from the crevices in the rocks, from which they generally obtain good returns, an instance being recorded of a party of miners on this part of the coast clearing £700 per man in a few months. This, of course, was an exceptional return. Considerable discussion has taken place respecting the probable source of the gold, but nothing definite has been ascertained. The

local opinion is that it is washed up from auriferous beds at the bottom of the sea. The gold-saving appliances used are generally of a somewhat primitive character, the returns not being sufficiently large to encourage the introduction of costly machinery. One peculiar feature of beach-mining is that, as a rule, where the black sand is deepest the gold is least plentiful. In the vicinity of the Macleay Heads there are veins of black sand from 2 to 6 ft. in thickness, but these contain only slight indications of gold. The best returns have been obtained during exceptionally low tides, when the masses of submerged rock can be approached, and the black sand in the holes and crevices extracted. The plates often require different modes of treatment, according to the locality from which the sand is obtained. In preparing the plates cyanide of potassium is used to a large extent, and in many instances the concentrates have to undergo a separate treatment before finally passing over the plates, especially where traces of coated gold are perceptible.

THE MARVIN ELECTRIC DRILL.

The importance of an electric rock drill and its value in mining has induced much effort in this direction, but the difficult conditions encountered in the construction of such a machine for a long time baffled the efforts of those who worked upon the subject. A modern rock drill must be so simple in its design that it can be taken care of by the most ordinary mechanic. It must be so constructed that it will endure abuse and an almost total absence of care and judgment on the part of the drill runner. It must be powerful enough to drill with a rapidity commensurate with the rapid progress made in modern rock excavation. It must be of such weight that it can be readily handled by the ordinary force of men employed in the different mining operations. Among the defects of the early drills were excessive weight, undue heating, weak mechanical construction of the plunger, springs, etc., and trouble with the ratchet, connections and switch. Advantage has been taken of all the experience gained from the earlier experimental drills, and also from the practical working of an electric percussion drill plant which the Solvay Process Company has been using for several years at its quarries near Syracuse, for drilling in hard limestone, and the condition above enumerated are claimed to be met by the Marvin Electric Drill, which has recently been placed upon the market by the Marvin Electric Drill Company, of Canastota, N. Y. The drill itself consists essentially of two coils of wire, placed end for end and surrounding a solid steel plunger which very closely resembles the piston of the steam drill. Electrical impulses are transmitted alternately through these two coils of wire, with the result that the plunger moves to and fro precisely like the piston of a steam-engine.

The current is led to the drill from a dynamo of special construction, over three wires, which constitute two independent circuits. There is no commutator upon the drill and nothing resembling a valve, the current being shifted at the dynamo. The coils of the drill are insulated entirely with mica, and hermetically sealed in a boiler tube jacket. The drill is mounted and operated on a column or tripod, in the usual manner. Drills operated on the Marvin system were put at work in various parts of the country some years ago, but while they afforded striking evidence of the advantages of the electric system, the drills themselves were not of sufficient capacity and were not built strong enough to fulfil all that was required of them.

The experience of the Solvay Process Company, at Syracuse, N. Y., with the drills, it is stated, has been most satisfactory to the purchaser, and gratifying to the company. The original plant included a dynamo and three drills. The plant has been increased from time to time until now seven drills are in operation, and it is understood that the number will be shortly increased.

The rock drilled is a hard quality of blue and gray limestone, quite seamy, and on that account somewhat difficult to drill. Two sizes of machines are used, the larger size drilling holes 6 to 8 ft. in depth and 2½ in. in diameter, the smaller machine drilling holes about 20 in. in depth and 1¼ in. in diameter. The average performance of the large machines is about 60 ft. of hole in 10 hours, although the machine has drilled over 100 ft. in 10 hours. The average performance of the small size drill, which is readily handled by one man, is over 100 ft. of 1¼ in. hole in 10 hours. The operation of the plant has been uninterrupted since the start, no time having been lost by reason of the failure of any part of the electrical apparatus. No expert help is required in the maintenance of the plant, and it is a significant fact that the drill runners are paid no higher wages than the ordinary quarrymen.

Below is given an extract from the record of the Marvin drills, at the Solvay Process Company's quarries near Syracuse.

Month.	No. of Drills.	Total Drill Hours.	Total Feet.	Average Feet Cut 10 Hours.
1893.				
January	3	722	4,043	50
April	2	732	4,397	60
July	5	1,340	9,428	60
October	5	992	7,451	75
1894.				
January	5	1,168	8,225	70
April	5	1,093	7,471	68
July	6	1,369	10,337	75
October	7	1,413	10,241	72
1895.				
January	5	1,481	11,886	80

The total average cut per 10 hours in 1893 by drill was 60 ft.; in 1894 it was 70 ft. The total length of 2½ in. holes cut by drill No. 3 in 1893 and 1894 was 32,397, or 6 miles. The amount of rock excavated in 1893 was

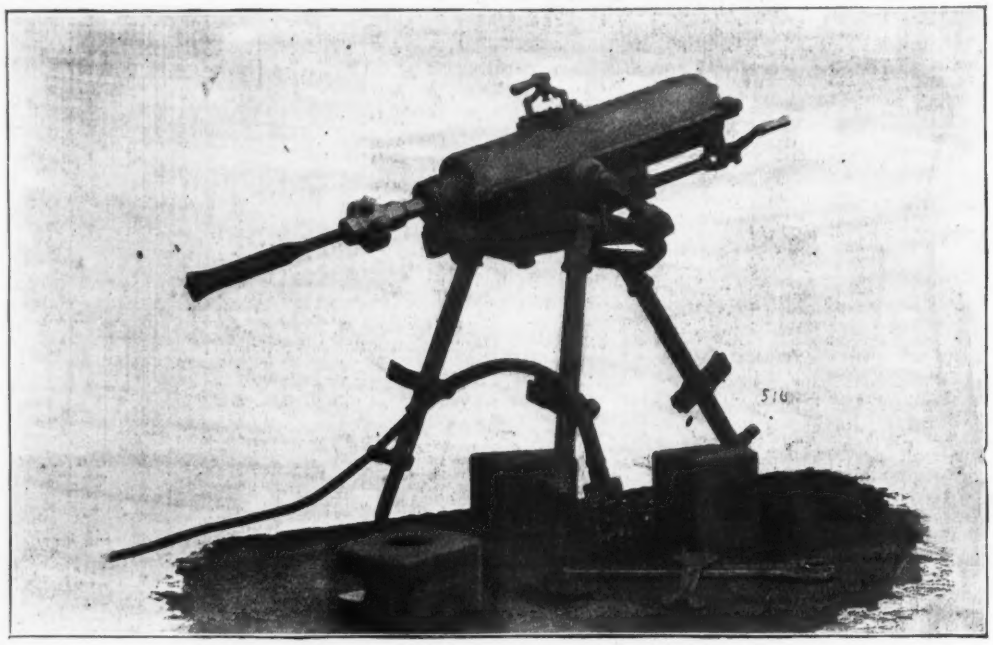

FIG 1.—MARVIN ELECTRIC DRILL, TYPE E.

340,000 tons; in 1894 it was 408,000 tons. The rock is a hard blue and gray limestone. The extremes of temperature of the air during the time drills were operated were 110° above and 10° below zero, Fahrenheit.

The extreme simplicity and strength of construction of the electric drill makes it particularly adapted to mining work. The conditions under which these machines are operated, are entirely hostile to all tight fittings and close adjustments. In the electric drill no such constructions are required. There is, as before stated, nothing resembling a valve motion about the machine. The plunger runs so freely in its bearings that they are not readily cut out by grit, and in fact, it does no harm if they are very badly worn and loose, as the machine does not lose any of its efficiency or power under such conditions. The machine may be pounded and banged about, buried in mud and water, exposed to the flying debris of a blast, and in other ways misused, without injury. In operation it is equally durable. It is almost impossible to injure it by unskillful handling. If the drill runner is careless and does not feed the machine up to the rock, no injury results to the drill, as the plunger is automatically cushioned by the electric action, in case the stroke becomes too long. This result is accomplished by the shifting of the current at the dynamo the plunger of the drill moving in synchronism with the dynamo armature. This is a point which will be appreciated by all who have had experience with broken front heads and side rods. Another peculiarity is that the stroke can be shortened indefinitely. The machine may be fed up to the rock until the stroke of the plunger is ¼ in. or less, but the motion of the plunger continues with the same regularity and speed as when running with a full 6 or 8-in. stroke. This feature is of great assistance in starting a hole and in working through seams. As all of the parts of the drill work freely, little oil is used for lubrication. In the operation of the drill the wires are led to within a short distance of the place where it is desired to operate and the drill is connected to the wires by means of a flexible cable, containing three conductors. The cables are durable, as the wear upon them is slight.

The dynamo, which furnishes the current for the operation of the drills, is characterized by the same simplicity of design and strength of construction employed in the drills. As the dynamo runs in synchronism with the drills, its speed is very low, being from 350 to 400 revolutions

per minute, according as it is desired to run the drills with greater or less rapidity.

The winding of the armature consists of a single coil composed a few turns of stranded wire. Should any accident happen to the machine, the armature winding can be renewed by an ordinary mechanic in a few hours' time, without removing the armature from the dynamo room. Having large self-oiling bearings, and requiring no adjustment of the brushes, the dynamo does not require much more attention or expense

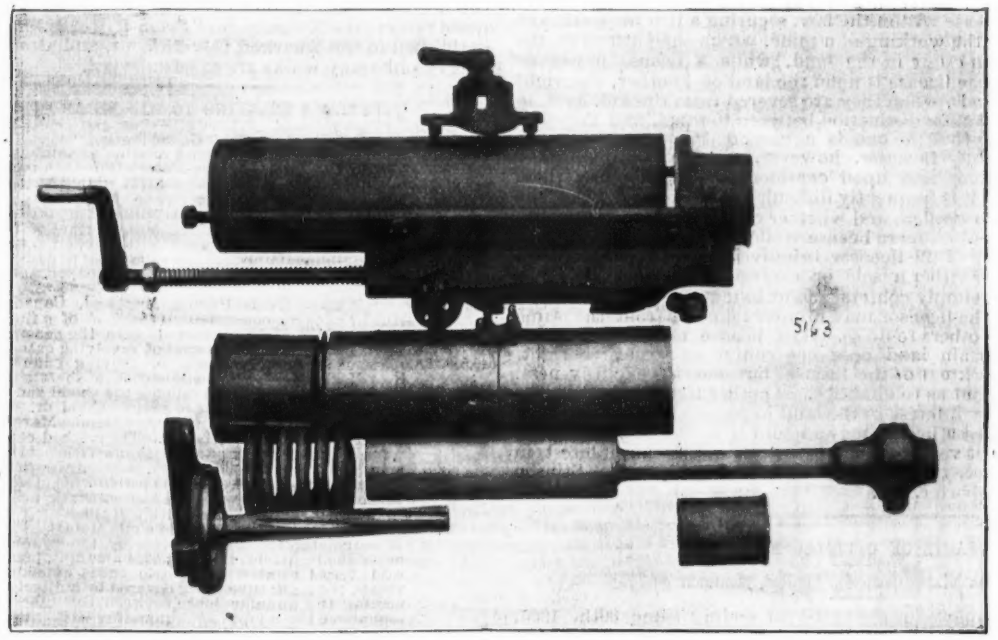

FIG. 2.—PARTS OF TYPE E, MARVIN ELECTRIC DRILL.

for maintenance than a Pelton water wheel. Both armature and field of this machine are made up of sheet iron punchings. The field coils are wound upon frames and slid into place in the machine, together with the armature which they surround. As the winding of the armature is but a few hours work, the construction of the machine is such that it can be very readily subdivided for transportation on mule back in inaccessible regions, without materially increasing the cost of the machine. The voltage used in this system is 130 volts, alternating, but the pulsations are slow, about 350 per minute, and little or no shock is received from the wires, and there is no danger from contact with any part of the system.

The overheating, which was a troublesome feature of the former drills, has been entirely overcome, yet the drills are so constructed, being insulated entirely with mica, that an excess of current cannot injure them, and they could be heated red hot without injury.

The accompanying illustrations show, Fig. 1, a type E, or 8-in. drill complete, mounted on tripod, and Fig. 2, the separate parts of the same drill, from which it is seen that they are few in number and strong and heavy enough to withstand the rough usage of mining or quarrying work. Fig. 3, showing a section through the drill, gives a clear idea of the details of its construction.

Referring to Fig. 3, showing the details, 1 is the plunger or piston of the machine, and is seen to be very similar to that of an air drill. This plunger is a solid steel forging, having an enlarged portion 2 which is surrounded by the coils of wire 3 3 and a shank 4, which passes through a bearing in the front head of the machine 5 and provided with a massive chuck 6 for holding the drill steel or bit. The magnetic pull of the coils 3 draws the plunger, backward and forward as the current alternately passes through the one or the other. The rifled ratchet rod 8 is provided with a ratchet wheel in the back head 9 and enters a rifled nut in the back part of the plunger. The cushion spring 7 is a very heavy coil spring resembling a car spring. The function of this spring is to assist in checking the backward stroke of the plunger. It thus absorbs the surplus energy of the return stroke and supplies the energy thus stored to the forward stroke. After two years' experience it is stated that the style of spring now used has never been broken; 10 shows the brass plugs where connection with the cable is made.

The construction of the electric coils is peculiar to this machine. Bare copper wire of square section is used and is insulated as it is wound, with pure mica, no other insulating material being used in the construction of the drill. The shape of the wire and the material employed for insulating enables the coil to be wound so that, when completed, it is a practically solid mass of copper and mica, there being no chance for the insulation to be injured by the vibration of the machine. The absence of all inflammable material makes the coils fireproof. The wire is wound upon a brass tube provided with brass heads, and is encased in an iron jacket, which is brazed to the coil heads at both ends, making the coil entirely impervious to dirt or moisture.

It will be noticed from the description that no stuffing boxes or close fits are necessary in the machine. The plunger runs freely, having a bearing in the coils on the back end and in the front head of the drill at its shank. The shank of the plunger travels through a brass bushing 11 which can easily be renewed, when badly worn.

The advantages of the use of electric drills are apparent in many fields of work and the production of a reliable drill, showing a fair practical economy, is a matter of wide interest.

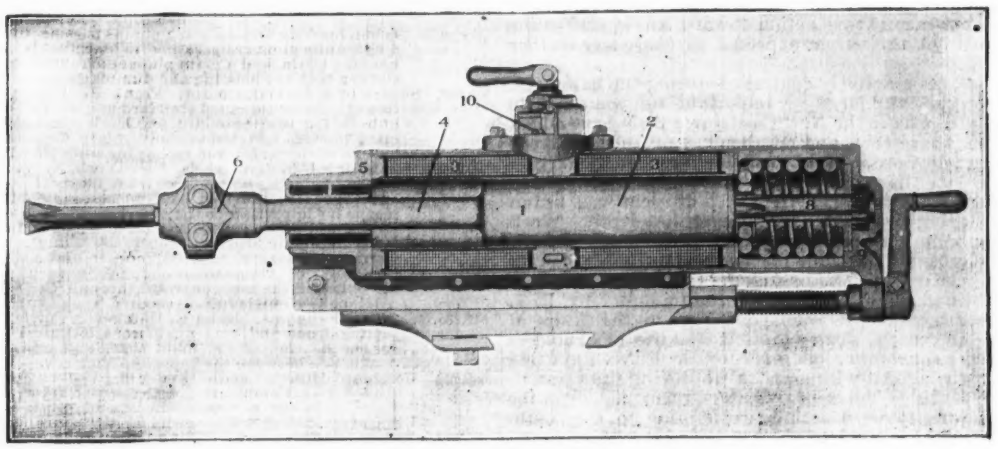

FIG. 3.—SECTION OF TYPE E, MARVIN ELECTRIC DRILL.

All sizes of drills can be built on this system, and it is the intention of the Marvin Company to bring out a line of channeling machines and coal cutters at an early date.

Ancient Roads in India.—"Indian Engineering" says that the old road over the Malakand was a revelation to the Chitral relief force of the engineering enterprise of the followers of Buddh in the earlier centuries of the Christian era. Its alignment was excellent, the cuttings through the rocky spurs which had to be crossed had been boldly made, and in general construction it could scarcely have been improved, though, of course, after centuries of disuse portions of the roadway had been obliterated. But there are many evidences extant in the Punjab itself of the Buddhist road-builders of the same period.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

SUPREME COURT OF OREGON.

Mining Lease.—A license for the possession of a mining claim, which by the terms of the instrument creating it is made exclusive and irrevocable, and which by reason of the expenditures of the licensee in development of the mines under the agreement has become a license coupled with an interest, under which possession may be maintained against the world, is a lease within the law, securing a lien for work and materials furnished for the working of a mine, which shall attach to the mine. A lease grants an estate in the land, while a license passes no estate, and when the mine license is upon the land of another, the right of property in the minerals, when they are severed from the soil, vest in the licensee. There is a clear distinction between the two, and they are further distinguished, in that the one is a corporeal and the other an incorporeal hereditament. Licenses, however, are frequently granted with terms and conditions and upon considerations which ally them closely to leases, so that it is frequently difficult to determine when the border line has been transcended, and whether or not they are in reality leases instead of licenses. A mere license while it remains executory is revocable at the pleasure of the licensor, is indivisible and non-assignable. But a license may confer either a sole or exclusive right, or simply a right in common. If it simply confers a right to take ore or work a mine it is not exclusive, and the licensor may himself take ore from the same land or mine, or license others to do so. So a license to dig and carry away all the ore in certain land does not confer an exclusive right. Such a grant shows the extent of the license, but not its exclusiveness. It is a license without stint as to quantity. Another test is, whether the grantee has acquired any interest in the land in respect to which he may maintain ejectment. But a license may amount to a lease if conferred in such manner as to give it validity; such is the case where an interest in the land is given, or where the license is for a definite period.—Stinson vs. Hardy, 41 Pacific Reporter, 117.

ABSTRACTS OF OFFICIAL REPORTS.

Montana Mining Company, Limited, Montana.

The report of this company for the half-year ending June 30th, 1895, shows that during that period the mill reduced 27,830 tons of ore, the actual realized value of the bullion obtained being $397,617, or $14·60 per ton. The proportionate money value of the precious metals contained in the ore was 68·23% gold and 31·77% silver. The quantity of metal obtained was 13,437 oz. gold, and 206,448 oz. silver.

The total income for the half-year, as noted above, was $397,617. The working expenses were $194,706; prospecting and operating No. 1 shaft $66,673; extraneous expenses, $10,569: making the total $272,048, and leaving a balance of $125,569. In addition to these expenses the sum of $25,667 was paid out on permanent improvements.

The average return actually realized, as also noted above, was $14.60 per ton. The working expenses were $7.15 per ton; No. 1 shaft, $2.45; extraneous expenses, $0.39, making a total of $9.99, and leaving a profit balance of $4.61 per ton worked. The permanent improvements made were chiefly in the purchase and erection of the new Riedler pumping engine. A reduction of tonnage work from the previous half-year is due to the fact that for four months the 60-stamp mill was not in operation, and the value of the ore treated in the 50-stamp mill was raised during that period to compensation for the loss of production in the low grade mill.

The trial of the suit against the St. Louis Mining & Milling Company was closed in May, the court giving judgment confirming the Montana Mining Company's title to the disputed section of the Nine-Hour lode. The St. Louis Company has taken some action toward an appeal to the Montana Supreme Court, but this is not expected to cause any further trouble.

Development work has been actively continued during the half year, and without the discovery of any large or important ore bodies. The developments on the 700-ft. level in the New Castletown lode have added about 10,000 tons to the ore reserve, and at the close of the half year there were about 40,000 tons of ore in sight available for extraction.

On the Drumlummon lode the principal development was directed to the 900 and 1,600 ft. levels. In the 1,600-ft. level a crosscut was begun for the purpose of developing the North Star lode at that depth. Work had to be suspended for some time to permit of the erection of the new pumping plant, but the crosscut has now reached a point 150 ft. distant from where the lode may be expected to be found. Drifts have also been commenced both north and south upon the Drumlummon. Mr. R. T. Bayliss, managing director, expresses much confidence in the future of the work at this level. In order to satisfy himself and the stockholders as far as possible he had an examination made by Dr. R. W. Raymond and Mr. T. A. Rickard, who agreed with him in approving the vigorous exploration of the lower levels of the mine. Both of them concur in the opinion that the indications favor especially exploration to the southward, although they think the ground to the north also worthy of examination.

Mr. Bayliss, in his report, also says: "The Riedler pumping engine plant, which has recently been erected in the 1,600-ft. level, was rendered necessary owing to the greater quantity of water met with in the developments at the bottom of the mine, and consists of a duplex differential Riedler pump, with plungers 3¼ in. and 5¼ in. in diameter, and 24-in. stroke, actuated by a horizontal compound condensing Corliss engine, with cylinders 16 in. and 25 in. in diameter and 24-in. stroke, and has a capacity of 400 gals. per minute against a head of 1,230 ft. when running at 90 revolutions. At the present time it is working to about one-third of its capacity; therefore it will be able to handle, without difficulty, any quantity of water which we may reasonably expect to encounter in these workings. The erection of this pump has resulted in a saving of not less than 60% in the consumption of fuel hitherto necessary for operating the ordinary steam pumps which were previously situated in the 700, the 1,000 and the 1,200-ft. levels, and it is evident that by this economy of fuel alone the Riedler pump will repay the cost of its erection in 18 months. In addition to the saving in the consumption of fuel, a considerable economy is effected in the labor and repairs necessitated by the operation of the pumps formerly in use; and it may be safely assumed that the introduction of the Riedler pump will enable the company to unwater the mine at an expenditure not in excess of 25% of that incurred under the old system."

The Locomotive Industry in Russia.—The Russian Minister of Finance is at present devoting considerable attention to the question of making Russia independent of foreign locomotive builders. At present the only locomotive works are—in the north, the Putilov and Nevskoi Works; and in the center, the Kolomna and Briansk works. New works are to be established in the Kharkoff Government, and also in the Caucasus, while the Pruschkovsky works are to be enlarged.

PATENTS RELATING TO MINING AND METALLURGY.

United States.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

TUESDAY, NOVEMBER 12TH, 1895.

549,515. Process of and Apparatus for Manufacture of Gas. Edward D. Kendal, Sewaren, N. J. The process for the manufacture of gas consists in directing immediately against each other a flame in the form of a blast or jet, and a blast or jet of hydrocarbon vapor, and conveying off the resultant gases.

549,582. Water-Wheel. Ovide Parent, Montreal, Canada. Combination with a ring of buckets, connected to the shaft of a flume formed of a top plate and a bottom plate, connected with the penstock and a circular plate D, having openings and a series of revolving gates.

549,586. Apparatus for Sinking Shafts or Driving Tunnels. Richard P. Rothwell, New York, N. Y. In combination a shaft sinking or tunelling shield, power mechanism for advancing the shield and a gravity device to automatically vary the action of said mechanism.

549,596. Method of Utilizing Tin of Stanniferous Materials. Arnold Erlenbach, Essen-on-the-Ruhr, Germany. The method consists in heating the stanniferous materials together with muriatic acid so as to turn the tin into solutions of perchloride of tin, concentrating said solutions, continuing the heating so as to cause the perchloride of tin to distill off, and simultaneously introducinga stream of muriatic acid, and distilling off so as to obtain an aqueous perchloride of tin.

549,622. Apparatus for Extraction of Precious Metals. Philip Argall, Denver, Colo. A percolator for treating ores by the cyanide process comprising an outer shell capable of being closed air-tight, hollow trunnions upon which said vessel rotates, concentric tubes extending axially through the vessel, the outer tube being covered by a filtering medium, a passage connecting the annular space between the tubes with one of the hollow trunnions, and a pipe communicating with the chamber surrounding the outer tube.

549,624. Drill Clamp for Stone Channeling Machines. Albert Ball, Claremont, N. H., assignor to the Sullivan Machinery Company, same place and Chicago, Ill. Combination of an integral clamp body having a depression or seat corresponding to the width of the drills and of depth sufficient to receive a gang of drills, and a removable clamp.

549,652. Underground Electric Propulsion. John E. Parker, New York, N. Y. In an underground system of electric railways, a rectangular metal slotted conduit, having continuous flanges on the base and a removable cover, in combination with a removable iron cross frame.

549,657. Apparatus for Manufacture of Gas. Henry M. Pierson, Brooklyn, N. Y. Combination with companion generating furnaces and inclined coal gas retorts, a chimney and retort furnace, of companion retort combustion chambers.

549,736. Extraction of Gold and Silver from Ores. John C. Montgomerie, Dalmore, Stair, Scotland. Patented in England October 27th, 1893, No. 20,343; in New Zealand, October 27th, 1893, No. 6,775; in Cape Colony March 29th, 1894, No. 913; in India March 29th, 1894, No. 106; in South Australia April 9th, 1894, No. 2,663; in West Australia April 10th, 1894, No. 502; in Victoria April 10th, 1894, No. 11,265; in Transvaal April 10th, 1894, No. 620; in New South Wales April 12th, 1894, No. 4,972; in Tasmania April 14th, 1894, No. 1,261; in Canada July 20th, 1894, No. 46,630; and in Austria-Hungary July 24th, 1894, No. 172 and No. 6,627. The process consists in mixing with the pulverized ore or compound an alkaline dioxide, such as soldim dioxide, and treating this mixture in a vessel containing water holding a insolution a cyanide, such as cyanide of potassium, an alkaline oxine, such as sodium oxide, and a nitrate, such as sodium nitrate, allowing the chemicals to act on the ore until the precious metals are soufficiently dissolved.

549,658. Dredging Apparatus. William B. Piess, Stockton, Cal., assignor to the Piess Dredging and Reclamation Company. In a dredger, a swinging boom, hoisting and dumping chains passing over suitable guide pulleys, a hydraulic plunger operating independently to strain and slacken the hoisting chain, and a main plunger arranged to simultaneously strain or slacken both the hoisting and dumping chains.

549,668. Separator and Amalgamator. Frank L. Fisher, Granger, Ore. Combination of a screw-threaded standard and a series of wheels having threaded hubs fitting said standard and having troughs of progressively increasing diameters adapted to deliver into one another from the top into the bottom of the series, and means for supplying the upper trough.

549,699. [Separator. Christian Abele, New York, N. Y. An inclined receiver or screen having its bottom free from obstructions and its upper and lower ends open for the free passage of the material being operated upon, means for imparting to the receiver or screen a succession of movements having a simultaneously upward and longitudinal direction.

549,771. Reamer for Use in Mining. Robert H. Elliott, Birmingham, and John B. Carrington, Jasper, Ala., assignors to the Alabama Blasting and Mining Company, of Alabama. Combination with pivoted plate and means for swinging the same outward through the sides of the reamer head, of a detachable cutting blade secured to plate and provided with teeth.

549,785. Frame for Stamps. Isaac B. Hammond, Portland, Ore. A standard comprising front and rear angle-irons, a central casting forming a support for the bearing of the main shaft, and castings adapted to receive the connection between the opposite standards.

549,791. Combined Miner's Candle Holder and Pocket Tool. Frank D. Holton, Hill City, S. Dak. Combination with a spring frame, of a spring candle holder, a knife blade and a pointed hook, all pivoted in frame between holding arms, and provided with locking faces and a clamp screw.

549,812. Rotary Stamping and Grinding Mill. John J. Newsom, Oakland, Cal., assignor of three-fourths to Thomas R. Bassett and Thomas D. Newsom, same place. A rotary crushing mill consisting of a mortar, a cam roller therein, a shaft for the roller, a frame on which shaft is mounted, a driving shaft on which one end of the frame is pivoted, power connections, a buffer block under the other end of the frame and a wedge for vertically adjusting said block.

549,818. Rolling Mill. John A. Potter, Munhall, Pa. A three-high mill, having a removable middle roll, power-driven outer rolls, driving pinions and spindles connecting them with the rolls, one of said spindles being adapted to be shifted from one pinion to another pinion which revolves in reverse directions.

549,830. Subaqueous Mining Machine. Henry W. Smith and William W. Smith, Portland, Ore. The tube composed of a series of detachable sections, the lower one being provided with an interior, annular shoulder, a cross bar, a shaft stepped in cross bar and made in detachable sections having connections or joints which are located directly opposite the joints of the tube sections, and one or more removable fluke wheels, keyed on the shaft.

549,839. Billet-Conveyor. Henry Aiken, Pittsburg, Pa. Combination of a conveyor table, means for moving metal along the same, a switch or deflector situate above the moving mechanism of the table, and traction devices connected to the switch.

PERSONAL.

Mr. C. H. More was re-elected president of the Granite Dealers' Association of America at a recent meeting held in Boston.

Mr. John P. Petty, mining engineer, left this week for the Playa de Oro gold fields of Ecuador on professional business.

Mr. H. B. Adsit, formerly of Colorado, has been appointed superintendent of the Desert Queen mine, Riverside County, California.

Mr. J. T. Gribble, formerly superintendent of the Reward mine, in Nevada City district, California, has been placed in charge of the Merrimac mine.

Mr. Charles E. Lawrence, formerly in the employ of the Cleveland Iron Company, has been appointed superintendent of the Hemlock River Company, located at Amasa, Iron County, Mich.

Mr. J. W. Sharpe, of Monterey, Mexico, is in Chicago. Mr. Sharpe is interested in gold and copper properties of the San Jose mining District, State of Tamaulipas, Mexico, and is visiting Chicago in the interests of the San Jose Consolidated Gold and Copper Mining Company, and Chicago capital will be interested in its development.

Mr. R. N. Dickman, of the firm of Dickman & Mackenzie, assayers and chemists, Chicago and Cleveland, is at present managing the gold mine of Messrs. Corrigan, McKinney & Co., of Cleveland, situated at Elconchens, Chihuahua, Mexico. Mr. Dickman will be with this property for some time to come.

Mr. John K. Mackenzie, of the firm of Dickman & Mackenzie, of Chicago and Cleveland, has just returned to Chicago from South Dakota, where he has been examining the Lucky Cuss Mine at Rapid City. The examination was made in the interest of Chicago parties. Mr. Mackenzie recently visited the Baker City, Ore., mining district, and made a thorough examination of two mines there.

Mr. E. S. Hutchinson, general manager of the Lick Branch Colliery, McDowell County, West Virginia, was run down and seriously injured by a locomotive this week. He was taken to Baltimore for treatment, and it is feared that it may be necessary to amputate one of his limbs. Mr. Hutchinson is one of the pioneer coal operators of the Pocahontas field, and was formerly manager of the Southwest Virginia Improvement Company's mine at Pocahontas, Va. He was one of the committee appointed by the American Institute of Mining Engineers to investigate the explosion which occurred at that mine at the time so many miners lost their lives.

OBITUARY.

Barton Hoopes, senior member of the firm of Hoopes & Townsend, manufacturers of bolts, nuts, rivets and kindred articles, died at his home in Philadelphia, Pa., on November 15th, aged 68 years.

Samuel Barton, the well-known New York financier, died in this city on November 16th, aged 56 years. He was a director in several of the "Vanderbilt" roads, and was interested in some industrial enterprises.

John C. Kauffman died in Leesport, Pa., on November 20th, aged 84 years. He was for many years identified with the iron industry of Eastern Pennsylvania. Her retired from active business some years ago.

V. L. Dorsey, superintendent of the Maryland mine, Grass Valley, Cal., was caught in a cave-in and received injuries which caused his death. He was a native of Grass Valley, 28 years old, and a son of Mr. S. P. Dorsey, principal owner of the mine.

Williams B. Wilkins, of Brooklyn, N. Y., died there on November 6th, aged 59 years. For several years he was the South American representative of the Harlan & Hollingsworth Company, and also represented the Baldwin Locomotive Works, the Messrs. Allison, the Phœnix Iron Works and others. He was engaged in the railroad supply business for a long time, and was president of the Ramapo Iron Company during recent years.

John R. Fell died at Philadelphia, Pa., on November 15th, aged 37 years. He was a member of the firm of A. Pardee & Co., miners and shippers of coal, which was established by his father and Ario Pardee. He was also one of the executors and trustees of the Drexel estate, a trustee of the Drexel Institute, a member of the Park Commission, the board of directors of the Lehigh Valley Railroad Company, North Pennsylvania Railroad Company, and others.

George Lawson, a well-known scientist and writer, died at Halifax, N. S., recently. He came from Scotland, and for 30 years was professor of botany and chemistry in Dalhousie College, and for 25 years was the secretary for agriculture in the Nova Scotia Government. He was a member of over fifty societies, being a fellow of the Royal Society of England and of the Royal Society of Canada. He was the author of several works on chemistry and botany, and a writer of renown.

SOCIETIES AND TECHNICAL SCHOOLS.

Australian Institute of Mining Engineers.—At the last annual meeting of this institute, held in Hobart, Tasmania, the Council presented its annual report, which concluded with the following recommendation: "The Council are pleased to nominate for honorary membership Mr. Richard P. Rothwell, editor of the 'Engineering and Mining Journal,' of New York, on whose behalf no special recommendation need be given. His well-known connection with the mining world is sufficient." This report was unanimously approved and adopted.

Engineers' Club, of St. Louis.—At the 424th meeting, held November 6th, S. E. Freeman was balloted for and elected a member. Prof. Chas. C. Brown's paper on "The Sewerage of Indianapolis" was then read by Mr. B. H. Colby. The paper explained the peculiar features of the problem, and was illustrated by drawings and maps, showing the general features, as well as details of the several interesting forms of special construction. The methods of carrying on the work, and its extent and cost were explained. The country being flat, little or no fall was available. The discussion was participated in by Messrs. Robert Moore, Kineally, Flad, Olshausen, J. B. Johnson, Sherman, Pitzman, Hermann, Maltby, Bouton, and President Russell. Mr. Moore gave some further details of the situation, size of streams, etc. The life of iron work painted with asphalt was discussed. The difficulty of getting good construction in masonry was mentioned, as was also the subject of water pollution and protection of water-sheds.

Civil Engineers' Club of Cleveland.—At the regular meeting in Cleveland, O., November 12th, the paper of the evening on Bridge Floors, by Mr Frank C. Osborn, was read. Mr. Osborn treated the subject historically, noting the progress in the design of solid floors abroad and at home from the earliest times to the present. He states that the first bridge on record with solid wrought-iron floor is the Britannia, built in 1845. In America the oldest solid iron trough floor for railroad bridge is that over the Williamette River, built in 1887.

Mr. Osborn gave the successive dates of introduction of about all the various forms that have now been in use, and brief description of the most important. He gives the requirements for a good railroad bridge as follows: Accessibility for examination and painting, facilities for thorough and rapid draining, the use of shapes and sizes readily obtainable from the mills, simplicity of shop construction, cheapness of first cost and cost of maintenance, convenience of changing location of track laterally and direct, simple and effective connection to girders.

INDUSTRIAL NOTES.

The Lebanon Rolling Mills, Lebanon, Pa., are now at work in all departments for the first time in many months.

Embreeville furnace, at Embreeville, Tenn., went into blast October 26th, and is now running steadily. There are about 400 men employed at the furnace, and in the mine.

The Bethlehem Iron Company last week shipped 161 tons of armor plates for the battle ship "Oregon" to San Francisco, and a lot of forgings for 7-in. and 10-in. guns to the Watervliet Arsenal.

The Ashland Manufacturing Company has been organized at Ashland, O., to engage in the manufacture of pumps. Part of its machinery outfit, including lathes, planers and drills, has been ordered.

The Colorado Iron Works, of Denver, Colo., have recently shipped two cars of machinery to the Omaha & Grant Smelting Company, at Durango, Colo. This machinery is for the sampling mill which was recently destroyed by fire.

The Brown Hoisting and Conveying Machine Company, Cleveland, O., has sold a complete tramrail system, to be installed in the new warehouses of the National Tube Works Company of Chicago, this system to consist of the necessary steel I beams for the runway, switches, turntables, trolleys and triple blocks, wrought iron hangers, etc.

The American Bridge and Iron Company, of Roanoke, Va., has been reorganized as the Virginia Bridge and Iron Company. The officers are: Samuel Walton, president; Charles C. Wentworth, chief engineer; C. E. Michael, secretary and treasurer. The foregoing, with H. S. Trout, J. C. Rawn and L. D. Ferguson, all of Roanoke, constitute the board of directors. The new company will operate the old plant, and has already secured a number of contracts.

The report of Messrs. Kemp & Keenan, receivers of the Troy (N. Y.) Steel and Iron Company, has been confirmed, and they have been discharged from further liability. The report shows that since the receivers took charge of the concern the receipts have been $1,527,680 and the expenditures $1,280,768, leaving a balance of $246,911. The court allowed each of the receivers $10,000 and three attorneys $8,150. The balance at present in the hands of the receivers, $218,688, is ordered transferred to the committee of the reorganized company.

The trial, in the United States District Court, of Frederick Baldt, manager, and James T. Anderson, foreman, of the Penn Steel Casting and Machine Company, of Chester, Pa., who were accused of attempting to defraud the Government in a contract for gun castings, ended in Philadelphia, November 19th, in a verdict of not guilty. After the testimony for the United States had been presented, no evidence was required for the defense. Judge Butler instructed the jury to acquit, and a verdict of not guilty was promptly rendered.

At a recent meeting of the Board of Directors of the Oriskany Malleable Iron Company, Rome, N. Y., a dividend of 7% was declared on the stock of $41,000. At a meeting of the stockholders the Board of Directors was re-elected for the ensuing year. Herman L. Sweet was elected auditor, and W. W. Sink, Charles L. Easton and Adelbert Platt, inspectors of election. The board of directors re-elected George Graham, president; W. P. Lock, vice-president; George H. Graham, secretary and treasurer. The executive committee consists of George H. Graham, George A. Baer and S. Nelson.

A hearing began in the United States Circuit Court in Philadelphia, November 19th, on the suit begun by the Harvey Steel Company to enjoin the Bethlehem Iron Company from an alleged infringement of patent in the use of the Harvey process for making armor plate. The suit has its origin in the contract taken by the Bethlehem Company to furnish armor plate to the Russian Government, the claim being that the export of Harveyized plate to that country will infringe on the arrangements made for the use of the Harvey patent in Europe. The hearing of the case will occupy some time, as a large number of witnesses are to be examined.

The Link-Belt Machinery Company, Chicago, is still running its works day and night, using the largest force ever employed. Recent contracts for electrical coal mining machinery have been closed with the following companies: Norfolk Coal and Coke Company, Norfolk, Va., consisting of two 66 × 18 ft. boilers, one 14 × 16 in. McEwen engine, one 7 ft. chain breast machine, one enclosed electric grinder, circuits, etc. Reed City Coal and Mining Company, Reed City, Ill., one 15 × 16 in. McEwen engine, one emery grinder, one 100 K. W. dynamo, switchboard, circuits, and four 6-ft. chain breast machines. Osage Coal and Mining Company, Krebs, Ind. Ter., one 61-ft. chain breast machine.

TRADE CATALOGUES.

"Ropeway Catalogue No. 17," third edition, issued by the California Wire Works of San Francisco, illustrates and describes the different forms, applications and parts of the Hallidie wire ropeway which is manufactured by the company, and incidentally also refers to some other uses of wire rope for transmitting power and other purposes. The Hallidie ropeway is well known, being in use at a number of large mines in California, Nevada, Idaho, Montana, Colorado, Alaska, Arizona, Washington and Mexico for transporting fuel, ore, etc., while it is also applied to carrying sugar cane on several large plantations in Honolulu. This tramway has as its essential feature a single moving rope with a fixed clip or carrier attachment, and while the priciple has not been changed many improvements in detail have been made as the result of experience. The use of the wire tramway presents a great many advantages and it can be applied where no other means of transportation would be practicable. The catalogue not only describes the ropeway and illustrate the different parts in detail, but it gives views of a number of those in actual use. It also gives a list of mines using this method, and some account of the results which have been obtained.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" of what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying or selling goods of any kind.

GENERAL MINING NEWS.

The Albuquerque, Colorado & Pacific Railroad Company has been incorporated by J. W. Hanna, E. Lewis, W. W. Borst, Geo. W. Wilson, J. C. Veatch, S. A. Osborne, Denver, Colo.; M. S. Otero, G. L. Brooks, H. B. Ferguson, Albuquerque, N. Mex. The capital stock is $100,000. The purpose is to build a railroad on the following route: Beginning at Durango, crossing the southern boundary line of the State of Colorado at or near Farmington by the most feasible route to Albuquerque, N. Mex.; also from Durango westerly and northwesterly crossing the western boundary of Colorado at or near the city of Grand Junction and westerly to the city of Salt Lake, and thence to the Pacific Ocean at or near Puget Sound. The company is incorporated at

a merely nominal sum for the purpose of making a preliminary survey to show the resources of the district to be traversed and an estimate of cost of construction. The officers are: J. W. Hanna, president; W. W. Borst, vice-president; J. C. Veatch, secretary; Geo. W. Wilson, treasurer; and E. T. Wells, counsel.

ALASKA.

Alaska Treadwell Gold Mining Company.—This company reports the clean-up for the month of October as follows: Period since last clean up, 30 days, bullion shipment, $77,479; ore milled, 20,821 tons; sulphurets treated, 387 tons. Of bullion there came from sulphurets $23,836. The gross expenses for the month were $24,845, leaving a balance of $50,634 as profit for the month. The average yield was $3.72 and the average expenses $1.19 per ton of ore worked.

CALIFORNIA.

Butte County.

(From Our Special Correspondent.)

Pactolian.—This mine, near Hurleton, in the Forbestown Mining District, has been sold, through J. F. Crosett, to San Francisco parties, who will continue the development work. The main tunnel is in 327 ft. on the ledge, and an upraise of 120 ft. has been made. At a depth of 100 ft. the vein is 3 ft. wide, the ore assaying about $20. The claim comprises 445½ acres.

Los Angeles County.

(From our Special Correspondent.)

Big Horn.—At this mine, on Big Rock Creek, the shaft is down 300 ft., and crosscuts show the ledge in some places to be 50 ft. from wall to wall. The new 100-stamp mill, in course of erection, to be operated by water power, will be capable of crushing 300 tons of ore per day. The working force is being increased under the management of F. V. Layton.

Nevada County.

(From Our Special Correspondent.)

Cadmus.—This mine, on Deer Creek, has started up the new machinery. Power is furnished by a Pelton water-wheel under a 200-ft. pressure.

Riverside County.

(From Our Special Correspondent.)

Desert Queen.—The owners of this mine have adjusted their differences, and the mine and 5-stamp mill will soon be in operation again. H. B. Adsit, of Colorado, will take charge as superintendent.

San Bernardino County.

Waterloo Mining Company.—The United States Circuit Court of Appeals has affirmed the decision of Judge Ross, of Los Angeles, in the suit of John S. Doe against the Waterloo Mining Company for possession of the Red Jacket mine. Doe brought action in the San Bernardino County Superior Court to obtain possession of the mine, on the ground that the original location had not been made properly. The case was subsequently transferred to the United States District Court at Los Angeles, and Judge Ross decided in favor of the defendant company.

Sierra County.

Golden Star Mining Company.—This company is pushing its new tunnel ahead as rapidly as possible. It is expected that after running 60 ft. more the main ledge will be reached. Superintendent Wilson reports that a number of small veins of sulphurets which show gold have been encountered since the tunnel was commenced.

Primrose.—According to the Downieville "Messenger," Mr. Du Ray Smith, owner of the Primrose and Buffalo mines in Hog Canyon, will re-equip these mines next spring for active development.

Siskiyou County.

(From Our Special Correspondent.)

Pacific.—This mine, at the mouth of the Humbug in the Klamath River, is now being worked by an open cut, and is reported to be clearing about $75 per day. There are 20 men employed on day and night shifts. Electric light is used.

Tuolumne County.

(From Our Special Correspondent.)

Buchanan Mining Company.—This company is making arrangements to build a dam in Hunter's Canyon, which will provide water to work both the Buchanan and the Hunter mines the year round. An electric light plant will also be erected.

COLORADO.

Boulder County.

Queen Bess Mining Company.—This company will resume operations in the tunnel at once. The crosscut will be pushed ahead until the Sucker Boy vein is reached, when drifting will commence. The leasers on the McDermott tunnel, also at Copper Rock, are putting up an ore house at the mouth and drifting and stoping is being done. A large body of mill dirt is opened up along the back of the drift.

Summerville.—A large shaft house, with ore house adjoining, has been erected on this mine at Copper Rock. A steam hoist is in place and preparations for extensive development work this winter have been completed. Mr. Widmer is operating this property.

Clear Creek County.

(From Our Special Correspondent.)

Amy C.—This property is advertised for sheriff's sale to satisfy notes given by Robert Gilson to Monig & Bailey, of Denver. The two parties claim that they will carry their fight for possession of the mine through the courts. In the meantime Gilson is developing the property, sinking the shaft and blocking out ground.

Bald Eagle.—Parties connected with the First National Bank of Denver are said to be interested in the opening of this property at Idaho Springs. A new steam hoisting plant has been installed and the shaft will be sunk another 100 ft. as soon as the water is taken out. Levels will then be extended both east and west from the bottom.

Chicago.—Mr. Stephen A. Dorsey has brought action against the widow and heirs of the late Senator Plumb of Kansas for possession of this property, located at Idaho Springs, claiming that he advanced to Plumb the necessary amount to purchase the property, with the understanding that Plumb was to receive one-half of the mine for his share in the transaction. A demurrer was filed in the United States Court at Denver for the defendants, but it was overruled by Judge Hallett and an extension of 30 days was given in which to answer directly the bill of complaint.

Lexington.—Lessees are now working this property, and though the streak is small the values are high. The tunnel is now in on the vein about 600 ft.

Seaton.—The shaft is down 275 ft., and at 300 ft. drifts will be commenced both east and west. The west drift of the 200 ft. level has a streak of lead ore from 6 to 8 in. wide netting $50 a ton. At shaft No. 9 the pay streak is 2 ft. wide, running 20% lead, 50 oz. silver and $12 gold to the ton.

Shipments.—The Gulf road reports handling during the month of October 74 carloads of smelting ore from points tributary to Georgetown and 209 car loads from Idaho Springs. This ore, together with that milled, has been estimated to have brought $250,000 for the month.

Silver Queen.—After being idle for two years on account of treatment charges and the low price of silver, lessees have taken charge and are cleaning out the drifts preparatory to active operation, believing that the property will now pay, in view of the lower treatment charges offered by the smelters.

Dolores County.

Rico Aspen Consolidated Mining Company.—This company has closed down the smelting works at Rico on account of the cost of the treatment of its ores at that point being too large in consequence of the expense of fuel transportation and the great competition for fluxing ores with the Durango and Denver smelters. The management will for the present ship its product to whichever point offers the best inducements. It is understood that one of the Durango smelters will purchase the amount of ore on hand. This action is naturally a disappointment to the people of Rico, as it will throw a number of men out of employment at the beginning of what promises to be a severe winter.

El Paso County—Cripple Creek District.

Gold Crater Mining Company.—The consolidation of the Summit and Premium companies was consummated a few days ago and the incorporation papers of the Gold Crater Mining Company, which is the outcome of the consolidation, were filed with the Secretary of State on November 13th. The new company has a capitalization of $500,000 with 100,000 shares of a par value of $5 per share. The officers of the company are: W. S. Stratton, president; J. R. McKinnie, vice-president, and H. C. McCreery, secretary and treasurer. These gentlemen, with the addition of Messrs. J. H. McKinzie and E. B. Kennedy, form the board of directors. Mr. J. H. McKinzie has been appointed superintendent and general manager of the company, and Mr. J. W. Blades, who has been looking after the interests of the Summit Company, will be retained in charge of the properties. The Gold Crater Company is now in possession of between 30 and 40 acres of patented ground on Globe Hill besides a few acres on Gold. In the treasury there are $17,000 which will be used to push development work, says the Colorado Springs "Gazette." About 30 men are now employed.

(From Our Special Correspondent.)

Anaconda.—The tunnel is being vigorously worked, and a cross-cut across the vein 70 ft. has been driven without meeting the wall. For 60 ft. the vein assays from $6 to $8 per ton, and during the last 10 ft. the assays have kept improving from $10 to $40 per ton. One winze was sunk 60 ft. on the hanging wall of the vein, and was in good ore all the distance. A second winze is now being sunk to prove the continuance of the ore some 400 ft. away.

Elkton.—The output for October was 280 tons of shipping ore and 1,000 tons of milling ore from the Walter; 100 tons of ore assaying from 4 to 5 oz. and 2,000 tons of milling ore from the Elkton. The mine looks well and gives employment to 80 men.

Grace Greenwood.—This mine, on Gold Hill, recently shipped a carload of ore to the smelters. This property is showing fairly well lately, although considerable work was done in 1892 and 1893 without meeting much encouragement. At the latter part of 1892 there was a breast of ore 14 ft. wide which assayed $16.

Independence.—This mine on Battle Mountain is shipping its usual grade and quantity of high-grade ore. The shaft has now reached a depth of 600 ft. and large bodies of high-grade ore are now in sight

Katherine.—This mine on Raven Hill finds occasionally rich pockets of telluride ore in the phonalite dyke which crosses the claim which is being stoped fully 8 ft. wide. A sample from one of the rich pockets yesterday gave a return of 38½ oz.

Last Dollar.—This mine, on the south slope of Bull Hill, is sending to the smelter from 20 to 25 tons of ore daily, and over 100 tons is being treated at the local mill from the White & Co. lease. Ore is being lifted from five shafts on this claim—all by lessees.

Maggie Reeves Gold Mining Company.—This company owns five claims, the Ed. Wolcott, Missouri Boy, B. & M., Green Top and Yankee Girl; it has been capitalized for 1,500,000 shares of par value $1. The Ed. Wolcott is situated in Beaver Park, about 3½ miles north of the town of Cripple Creek. A shaft has been sunk 26 ft., and at a depth of 16 ft. the granite and porphyry were in layers from 12 to 20 in. deep, interlaced with small seams of talc. The Green Top is parallel to the Ed. Wolcott. The Missouri Boy, the Yankee Girl and the B. & M. are situated on or near the head of the North Fork of Spring Creek, the formation being granite. The B. & M. shaft has been sunk 60 ft. The vein at the bottom is composed largely of quartz, iron pyrites, with a little galena, the course of the veins being North 11° West. On the Missouri Boy some rich float has been found. The Yankee discovery shaft was sunk at the line of contact between porphyry and granite but does not show much value.

May Queen.—This mine, situated within the town limits and owned by the Cripple Creek Consolidated Mining Company, this week made a small shipment of 55 oz. ore to the Cripple Creek sampler.

Mollie Kathleen.—This mine, just north of the Gold King in Poverty Gulch, and owned by J. D. Goetner and others, is being actively worked under lease. The lessees, Phillips and Davidson, have erected a steam hoist over their 85-ft. shaft. Their shipments of late have been very satisfactory.

Raven.—This mine has not been worked since the option was secured on October 19th, although the intending purchasers had the privilege of doing all the development they wanted during the 60 days.

Summit & Premium (formerly Deerhorn).—These companies have recently been consolidated with a capitalization of $100,000 in $5 shares. This company now owns all the summit of Globe Hill, and development work will be pushed with vigor. The deepest shaft now is 375 ft., but the ore is very low grade. W. S. Stratton, of the Independence, is president of the company.

Union Company.—This company, owning the Pike's Peak, Orpha, May Nos. 1 and 2, Delmonico, etc., now gives employ to 100 men, the deepest shaft on the workings being about 330 ft. The shipments average about three carsof ore per week. Formerly these properties were all leased, but are now worked by the company save the Delmonico.

Lake County—Leadville.

(From Our Special Correspondent.)

Arkansas Valley Smelting Company.—The recent improvements have greatly added to the importance of this plant, and large business is now being handled. The pay-roll for last month showed 694 checks, aggregating $33,860.

Cleveland Gold Mining Company.—This company has removed its office from Denver to Leadville this week, and proposes to begin active work at once. The old shaft, which is down 200 ft. and is in good ore, is found to be too small, and a new shaft will be started and sunk to contact as fast as possible.

Kansas City.—A fine plant of machinery is being placed in position on the new shaft, which has cut the porphyry and is now down over 60 ft.

Keno.—The starting up of this property on Rock Hill of this camp inaugurates one of the most important enterprises that has been launched here for some time. The proposition is to ship manganese to the Illinois Steel Company's works. The Keno shaft in the early days was sunk 350 ft., but it has not been used for some years, and the lessees are to retimber and place the property into good condition at once. In the bottom of the shaft and in various drifts large bodies of manganiferous iron have been encountered, and it is calculated that 200 tons a day can be shipped. This is the first time that manganese has been shipped out of this State. Geo. W. Cook, General Western Agent of the Illinois Steel Company, and B. H. DuBois, owner of the Keno property, are at the head of the new enterprise.

Kohinoor Mining and Leasing Company.—The Kohinoor property lease was sold this week to Denver and Leadville parties, and immediately afterward the Kohinoor Company was organized. The capital stock is $20,000, and the directors are B. C. Keator, W. L. Cooper and E. B. Keator. Important developments for the near future are being planned.

Resurrection.—Sinking of the shaft has been resumed at the 650-ft. level, and it will be sunk to open up the Little Ellen ore chute. In the meantime shipments are being made from a nice body of gold ore opened up at the 650-ft. level. About 200 gals. of water per minute is being handled.

Sedalia.—Water is coming in rapidly, and a station is being cut to place machinery in position. The new shaft is about 50 ft. below the original level, and is going down rapidly.

Smith-Moffat Combination.—The October output

was as follows: Penrose, 587 tons iron, 236 tons carbonate; Denison, 65 tons sulphide; Evans, 195 tons iron; Henriett, 2,864 tons carbonate; Maid of Erin, 350 tons sulphide; Wolftone, 4,300 tons sulphide; The Starr, 1,429 tons iron; Bon Air, 172 tons carbonate. The report shows an increase for the month.

La Plata County.

(From Our Special Correspondent.)

San Juan Smelter.—The part of the San Juan smelter, which was burned a short time ago, is being rebuilt in good shape, and operations in the new sampling department will start in about two weeks. The Omaha & Grant Smelting Company, owning this plant, as well as the Standard Smelter, are now receiving a steady supply of ore for treatment. Shipments from now on will, however, become lighter, as several of the large producers of the tributary district are preparing for winter, laying in supplies for the time when development work will be done, as the roads are getting blockaded by the early snows. The San Juan country has produced a very large quantity of the precious metals during the past six months.

Mineral County.

Creede Leasing and Milling Company.—This company's mill at Creede, which has a daily capacity of 75 tons of crude ore began operations last week and is running successfully.

Ouray County.

(From Our Special Correspondent.)

American Nettie.—This well-known property has again started up, under lease to Charles Lindgren, who will push development during the winter.

Khedive.—A large force of men is pushing operations at this property and it is expected that one of the Bachelor chutes will be cut by January 1st.

Pentucket.—Mr. James Kelly will commence work for the winter on the Pentucket and Protection claims on Hayden.

Sweepstakes.—Every available man in this section has found employment at the Sweepstakes, and work on the great tunnel has now commenced in earnest.

Yellow Jacket.—Miller Bros. are operating this property. A few days ago a vein 14 in. wide was disclosed, assays from which ran high in silver, gold and lead. The ore is said to be the richest encountered in this district for a number of years, and considerable excitement prevails in consequence. Shipments will commence as soon as a road can be broken to the mine.

San Miguel County.

Suffolk Mill.—This mill at Ophir, with its 40-stamp capacity, automatic feeders and water-power, built by the Colorado Iron Works of Denver, is running very satisfactorily. Only the stamps and plates are used for the extraction of the gold, besides the patent process for working the tailings.

GEORGIA.

Polk County.

Georgia Slate Company.—This company, which has its office at Knoxville, Tenn., and quarries at Rockmart, is having difficulty in filling orders, and the month just passed has been one of unusual activity at its quarries. The demand for slate has far exceeded the production, and the company is now working 14 hours a day in order to fill orders. This slate is becoming well known for its beautiful color, toughness and unfading qualities. Tests made at Columbia College, New York, recently, demonstrate, the company states, that this slate is superior to any other tested in the United States for electric purposes, having a higher resistance than Vermont slate, which is generally used.

IDAHO.

Shoshone County.

Gem.—This mine has been obliged to close down partially on account of scarcity of water.

Stemwinder.—This mine is now operated by lessees, who are working a small force under charge of C. K. Baumle.

Tiger & Poorman Consolidated Mines.—F. R. Culbertson, manager of the Tiger & Poorman consolidated properties, is gradually putting a few more men to work on the Tiger. There are a great many improvements and changes to be made, however, before the consolidated properties will be in readiness to employ a full crew. On the Poorman side Harvey and others have leased the upper workings and will use the Poorman shaft as occasion requires.

(From an Occasional Correspondent.)

Bunker Hill & Sullivan Mining Company.—This company is now mining from 500 to 600 tons of ore per day. As far as the Bunker Hill is concerned the miner's union is a thing of the past. As a result the country is more prosperous than at any previous time in its history.

IOWA.

Marion County.

Dunreath Quarry Company.—This company has been organized by Samuel Slack, O. M. Robbins and others, with $100,000 capital stock, to open and operate a stone quarry near Dunreath. The office of the company is in Des Moines.

KANSAS.

Crawford County.

Pittsburg & Midland Coal Company.—This company has been formed in Kansas City with capital stock of $200,000. Ex-Governor Thomas A. Osborn, of Kansas; L. H. Bonebrake, F. B. Bonebrake, John T. Morrison, S. H. Sanger, W. C. Endsley, A. H. Lanyon, R. S. Lanyon, Frank Huntoon and W. O. Endsley are the incorporators. The officers are: A. H. Lanyon, president; J. T. Morrison, general manager, and F. B. Bonebrake, treasurer. For the present the field of operations will be near Midway, with the main office in Kansas City. It is understood that the company expects to lease new coal tracts in Southern Kansas.

Dickinson County.

Crown Plaster Company.—This company has been organized at Solomon City to quarry limestone near that place, and to manufacture cement and plaster. The incorporators are L. A. Wells, T. B. Hunkins, and others, of Salina, Kan.

MAINE.

Franklin County.

Carthage Brown-Stone Company.—This company was recently organized at Portland, Me., for the purpose of quarrying and manufacturing granite and brown-stone in Carthage. The capital stock is $350,000. The president is Benjamin F. Jacobs, and the treasurer is F. D. Koch, of Conshohocken, Pa.

MASSACHUSETTS.

Worcester County.

Ross Granite Company.—This company has secured the contract for the stone of some large buildings in Brooklyn which will keep its quarries at Milford busy for some time.

MICHIGAN.

Dickinson County.

Northern Michigan Marble Company.—This company has recently purchased an Ingersoll channeling machine which is now at work in the quarry near Foster City. Other machinery is to be set up shortly.

Iron—Marquette Range.

Star West Iron Mining Company.—This company has been organized with the following officers: Samuel Hoar, of Negaunee, president; Samuel P. Kaufman, of Marquette, treasurer. The company is a consolidation of the Wheat and Star West mines. It is stated that the output will be taken by the Illinois Steel Company.

MINNESOTA.

(From our Special Correspondent.)

Shipments of ore from both Minnesota ports last week were about 50,000 tons, of which Two Harbors sent out nearly all. Business will fall off very materially this week, however, as no mines are shipping, but the Minnesota hard at Soudan, and the Franklin group on the Mesabi. These will send down ore as long as possible. The mines that have closed the past week are the Chandler, Canton, Vega, Fayal, and Cincinnati. There has been an unexpectedly heavy movement between mines and docks on the Duluth & Iron Range road during the week.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Adams—This mine has two steam shovels stripping besides 150 men on another contract. A second shaft is being sunk on the hill where the deposit is considerably below ground, and it will be mined from there by the caving process. A third shaft will soon be started near No. 1, and it will be mined as is No. 1, by the milling process, making the mine both an underground and surface proposition. The new shaft is now 100 ft. in good ore, and will be stopped this week. Stockpiling will be commenced soon, and the mine is to be prepared for an immense output next year. It has all along been the intention to mine a portion of this property underground.

Auburn.—This mine has stopped shipments, and all but 100 of the men at work there have been transferred to the Fayal.

Canton.—This mine has stopped shipping, and is stockpiling for the winter. Shaft C. is down 150 ft., but water is still a great obstacle.

Cincinnati.—This mine has stopped its shipments with a total of 17,187 tons. It will be extensively developed the coming winter.

Commodore.—This company put a churn drill at work some time ago in the bottom of the shaft, and it has now shown a depth of 150 ft. of clean ore. The work of unwatering will soon be pushed with more vigor than before and the mine put in condition for extensive operations.

Fayal.—This company has shipped for the season a total of 136,601 tons, and is now working 300 men. It will have 1,000 men underground as soon as place can be made for them.

McKinley.—A firm of Youngstown furnace-men have taken over 120 acres of what was originally the McKinley mine, at the small town of McKinley, half way between Biwabik and Virginia, and will at once begin work getting it ready for shipping next season. It is intended to ship in 1896 about 75,000 tons. The property is an underground proposition. Captain Gilbert, who has had charge of the Pioneer, at Ely, will be in charge.

Vega.—This company has stopped shipments, with a total of 47,700 tons, not quite as much as had been looked for or had been expected by the management. Some 200 men are now at work underground.

Iron—Vermilion Range.

(From Our Special Correspondent.)

Chandler.—This noted mine has stopped shipments for the year, after sending out about 600,000 tons. For a two-shaft mine this is considerable of a record. Work at No. 4 shaft, which is to be sunk to the bottom level and connected with old No. 4, was resumed this week, and will be pushed, and this will be a very important part of the mine another season. The mine's stockpiles, with the exception of a little low-grade ore, are all cleaned up and ready for the heaviest load they have ever been called on to carry, many believing that 400,000 tons will be in stock before spring. The mine is taking on men continually, and the management states that there is no difficulty in getting all the miners wanted, many coming from the older ranges.

Redwood County.

(From Our Special Correspondent.)

The Redwood Falls gold mine, of which this paper has had something to say in times past, is now closed down, and very likely permanently, and if so the finish of a mistaken scheme, which drew considerable cash from the unwary, will have been noted. A test of the rock was made last week by an expert sent to the property for the occasion, and in 70 tons of rock about $60 in gold were found. The expert reported that the high assays that had been reported from the mine, running in many cases to several hundred dollars to the ton, must have been, if correct, from a rich chute which he was unable to find, and that the mine would not pay to work unless this chute could be again discovered. An assayer, who was under charge of the expert, made many assays during the week, but most of his results were blanks. A number of the leading papers of Minnesota have been prevailed upon to give this mine high standing.

St. Louis County.

(From Our Special Correspondent.)

At Kettle Falls, near the international boundary, on the Minnesota side, a crew of men are at work in a mica deposit and will be in the field all winter. They have a shaft down 15 ft. in the vein, and are taking out sheets of mica of good size but not clear. The hope is that as depth is attained the mica will become clear. The deposit is from 15 to 30 ft. wide. It is intended to make a thorough investigation.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

JOPLIN, Nov. 18, 1895.

The prices of lead and zinc ores have experienced a further decline, particularly among the lower grades, during the past week. The top price for zinc ore was $25 per ton and for lead ore $18 per thousand pounds. Some of the larger operators are holding their ore, while some low grade lots were not called for by the buyers. The weather has been good and the general output was about up to the average. The turn in from the camps is as follows: Joplin, zinc, 1,097,240 lbs.; lead, 341,690 lbs.; value, $19,050. Webb City, zinc, 857,730 lbs.; lead, 100,750 lbs.; value, $11,679. Carterville, zinc, 1,338,000 lbs.; lead, 273,500 lbs.; value, $19,840. Oronogo, lead, 18,280 lbs.; value, $216. Aurora, zinc, 677,000 lbs.; lead, 45,000 lbs.; value, $6,370. Stotts City, zinc, 175,000 lbs.; value, $2,100. Newton County, zinc, 192,000 lbs.; lead, 23,300 lbs.; value, $3,395. Galena, Kan., zinc, 2,090,000 lbs.; lead, 455,000 lbs.; value, $29,340. Total output for the district: Zinc, 6,416,970 lbs.; lead, 1,257,520 lbs.; value, $91,990.

Morning Star.—This mine made the largest turn-in last week ever made by a single plant in one week in the district, cleaning up 90 tons in six shifts.

Mound City Mine.—Pending some settlement among the stockholders, this mine, on the Connor land near Carterville, has been placed in the hands of a receiver, for the protection of all concerned. This is one of the best equipped and largest producing mines in the district.

Tender Foot.—Operations at this mine, situated just southeast of Carterville, Capt. Fred. Hills, manager, have been temporarily suspended, owing to some legal complications.

Victor Mine.—The principal stockholders of the Victor Mine are here, and the receivership has been vacated. They will resume operations on the property, but will probably not build such a large plant as that recently burned.

MONTANA.

(From Our Special Correspondent.)

Several deals in large gold properties are now pending, with every probability of being closed in the near future; but until closed it is not deemed advisable to mention them. Several others could be made were it not for the hesitancy of owners to give fair time to promote a deal when the promoters have their clients in hand. As a rule these owners will only make a deal as to time for consummating it when the experts are on the ground to examine with the known intention of doing business if terms are fair; in other words, they have not the grand confidence in the promoters who claim to have unlimited capital back of them until they show business.

Silver propositions do not receive much attention from Eastern and foreign investors, and yet in the aggregate there is quite as much money made by local operators in silver as in gold; prospectors as a rule prefer to take their chances with silver instead of gold.

Deer Lodge County.

Montana Mining Company, Limited.—The directors state that the total output for October was 6,400 tons of ore, which contained gold, 2,399 oz.; and silver, 20,940 oz. The estimated realizable value of the same is $61,030. The expenditure for the month was: Working expenses on revenue account, $34,400; outlay on developments, $11,100; extraneous expenses, $300; permanent improvements and machinery, $100; total, $45,900; leaving the net result $15,100 for the month.

Royal Gold Mining Company.—The controlling interest in this company on Flint Creek, says the Butte "Inter-Mountain," has been acquired by W. A. Clarke, of Butte, and Con Kohrs, of Deer Lodge, William Bennett having transferred his 120,000 shares to the gentlemen named for a large consideration. A. C. Cabel, a well-known mining man of that section, will be installed as superintendent of the Royal, which is one of the gold producers of the State. The Royal is at the head of Boulder Creek, a small stream that puts into Flint Creek. Nelson Bennett, Willard Bennett and Conrad Kohrs spent nearly $100,000 in its development and in the erection of a 10-stamp mill. The ore averages well and has paid dividends since the fall of 1893.

(From Our Special Correspondent.)

Prize Mine.—This mine, owned by Murray Bros., at Granite, after being long in the market, was sold about two weeks since. Price said to be $100,000, with a cash payment when deal was closed of $15,000. It is undoubtedly a good property, and in the hands of the present owners, said to be some of the Hearst heirs, there is little doubt that the mine will prove a producer.

Granite County.

Granite Mountain Gold Mining Company.—This company, capital stock $50,000, divided into 50,000 shares, and its principal office in Butte, has filed its incorporation papers. The trustees are C. H. Palmers, J. Hoatson, G. W. Irvin, J. H. Lynch and W. Winters, all of Butte. The mines are at Granite Mountain.

Jefferson County.

Elkhorn Mining Company, Limited.—The following is the return for the month of October: Mill worked 30 days and crushed 1,161 tons; bullion produced in the mill, $28,400; 22 tons of smelting ore sold, $1,320; total produce, $29,720; total expenses were $20,700; leaving an estimated profit for the month of $9,020.

Menell Gold Mining Company.—This company has filed its papers of incorporation with J. T. Cowan and T. P. Newton, of Butte, and J. M. Menell, of Oakland, Cal., as directors. The company has a capital stock of $100,000. The mines are near Basin.

(From Our Special Correspondent.)

The latest excitement in gold mining in this section is in the country lying between Basin and Rimini. It is a large porphyry dike or reef of low grade free milling ore.

Merrill Gold Mining Company.—Dr. J. M. Merrill (formerly of Philipsburg, now of Butte), associated with Jno. F. Cowan, W. H. Nichols and several other Butte gentlemen, have organized the Merrill Gold Mining Company, capitalized at 100,000 shares, par value $1, having four claims and three others under bond. They will have a 10 stamp mill ready for operation before the close of 1895, and commence business with everything paid for. The first stock was taken in blocks of 10,000 to 12,000 shares at 35c.; the present price of any stock offered is 50c. They expect great things of their property, probably with good reason, if the practical working of the ore, which is peculiar (blue porphyry), is successful.

Lewis & Clarke County.

(From an Occasional Correspondent.)

About 30 miles south of Helena, on a spur that extends east from the main range, rises a ridge probably 9,000 ft. high. This ridge is granite, excepting an immense intrusion of what is locally called porphyry, but which I suspect to be diorite. The top of the ridge has been worn off and the porphyry rock has been carried to a considerable distance down each side of the mountain. The porphyry intrusion is some two miles long and one mile wide, and it is flanked by granite on every side. At the east end of the porphyry it is wider and some 1,800 ft. of it extends like a T on each side the main body. That part extending south is about half a mile in length, but on the north side it is known to extend a mile and it is believed that it extends farther. There is one lead east and west, which is believed to extend from the granite on the east to the north and south vein. Its north and south vein extends the full width of the porphyry next the east end about in the center of the T before described. There are several short veins extending due west from the north and south vein to the granite, in the northern part of the T. There are numerous stringers from the east and west vein extending on both sides to the west, but at different angles. These stringers generally contain ore which shows considerable gold when crushed and panned. The veins, while generally alike, show different characteristics. In many places the veins are distinctly marked, in other places the veins are not distinguishable by the eye from the rock in which they lie. But the rock in the vein is considerably softer than what may be called the wall. The veins are large, and they show from 3 to 5 ft. of ore that will run about $12 a ton, with much ore on either side that shows gold in the pan. All the rock seems to be free milling. In the Columbia the ore is only known by its softness. The water from the drill when driving in ore is muddy; that from the drill when in the wall rock is almost clear, showing a very large per cent. of silica. The wall rock has not a trace of gold.

The Pauper's Dream Mining Company owns the Mollie Stark claim, and has a 10-stamp mill at work upon the ore. In the workings one or more seams have been found that are very rich in gold. All the rock for a great width shows gold. How wide the ore is cannot be told from present developments. Moses Manuel, of Helena, who first located the Empire Mine near Marysville, is putting up a 15-stamp mill on the Columbia, and other parties who own claims on the west end of the east and west vein are putting up a 10-stamp mill. It is expected that all these mills will be at work before New Years. It has been known for 30 years that there was gold on the sides of the mountain below this porphyry ridge, but no one suspected that the gold came from the porphyry. Last winter some one crushed a piece of the porphyry rock, and on panning it found gold. A search was then made, and the claims located on the veins spoken of. That there are other veins in the porphyry is believed, as colors of gold can be found in many places. The scarcity of water may interfere with the development of this ground, but as there is plenty of water within two miles of the porphyry, if the gold-bearing rock should be found in great quantities, it can easily be trammed by wire or rail to the mills which will be erected on the streams.

Madison County.

(From Our Special Correspondent.)

Morris & Elling Clipper Group.—The sale of this group, at Pony, in September, for $500,000, has created a good deal of interest in mining circles, and the woods have been full of representatives of proposed buyers since. As is usually the case after a sale has been consummated, any number of parties have come to the front who had intended buying. As a matter of fact, the owners have been offered a large advance if the English syndicate which purchased, paying $10,000 earnest money, default in their 10% payment the 23d of this month, November. The output of the mine has increased in value from the time of the sale, the shipments averaging $2,000 per car for the raw ore; the concentrates, $100 per ton; ore, milled, $10 to $15.

Silver Bow County.

Boston & Montana Mining Company.—This company has advertised for proposals for building a new power house and other buildings in connection with its works at Great Falls.

Mountain Chief.—F. A. Heinze, of the Montana Ore Purchasing Company, has become the owner of a two-thirds interest in this mine, which he has had under bond and lease for several months, says the Butte "Inter-Mountain." Some time ago Mr. Heinze acquired one-half of C. A. Nuss' two-thirds interest and secured a bond on the other interests. Yesterday he purchased the remaining interest held by Mr. Nuss for $6,000. This action became necessary owing to the fact that the bond expired this month. The remaining one-third interest has been held until recently by the Wall estate of St. Louis, but was purchased by J. A. Murray about two weeks ago. The company will make an offer for the remaining interest.

Niagara.—Black Rock.—It is announced that this important case—which involves the ownership of a vein which crosses one side and one end line of a claim—will be appealed from the decision of the Supreme Court of Montana to the Supreme Court of the United States.

NEBRASKA.

Dixon County.

Ponca Coal Mining Company.—This company has commenced work on its shaft, 2½ miles north of Ponca. F. J. Gath has charge of the work.

NEVADA.

Lincoln County.

De Lamar Mining Company.—Advices from De Lamar are to the effect that tunnel No. 10 is being driven as rapidly as possible and is now in a distance of 1,000 ft.

Storey County—Comstock Lode.

Following are extracts from the latest weekly official letters of the mine superintendents:

Confidence.—There has been no ore taken out of the mine during the week. The gross yield of bullion from the 114 tons and 50 lbs. of ore worked at the Brunswick mill during the week was $2,595.88.

Consolidated California & Virginia Mining Company.—In this company's mine the first of a series of west crosscuts has been started at a point about 200 ft. north of the station on the 1,000-ft. level of the old Consolidated Virginia shaft, says the San Francisco "Report." That this crosscut will have a long distance to run before reaching the wall rock of the west country may be seen from the distance traversed by the west crosscut 315 ft. north of the shaft, which was run on the 1,100-ft. level of the mine in the latter part of 1892 and the first half of 1893. That crosscut was run 484 ft. before it was stopped, and even at that distance it did not reach the west wall, but continued in Comstock vein matter. Then the West Consolidated Virginia people resumed work in the face and extended it a long distance into the west country. As the 1,000-ft. level is 100 ft. vertical above the 1,100-ft. level, and the Comstock ledge slants up and down at an angle of about 45°, the west crosscut just started on the 1,000 will have fully 100 ft. more to run than the west crosscut on the 1,100 before reaching the west country. Therefore it will have between 600 and 700 ft. of room across the ledge in which to pick up any ore body or indications of ore. Besides this width, which will increase as they go up, there is a length of 600 ft. of ground north of the shaft between the 1,000 and 500-ft. levels, which is unexplored and in which there are great possibilities and strong hopes of finding valuable ore bodies.

Crown Point.—The south drift from the south end of the slope on the ninth floor above the 700-ft. level is in 34 ft. The formation in the face is the same as previously reported, the assays ranging from $9 to $12 per ton. Have stopped work in the face and are now retimbering this drift. Shipped to the Mexican mills for the week 608 tons 1,260 lbs. of ore, the average battery sample of which was $9.50 per ton, of which $8.56 was gold.

Overman.—There were extracted from the 900-ft. level 10 tons of ore, the average car-sample assay of which was $79.28 per ton. We are repairing the 900 station of the shaft.

Segregated Belcher.—The yield of ore was 11 tons, averaging per car-sample $11.36 per ton. The gross yield of bullion from the 154 tons of ore worked by the Brunswick mill was $2,604.92.

NEW JERSEY.

Sussex County.

Sterling Iron & Zinc Company.—In Trenton, N. J., recently, Vice-Chancellor Pitney filed an order granting a permanent injunction in the suit of Alfred E. Beach and the Sparks Manufacturing Company vs. the Sterling Iron & Zinc Company, restraining it from discoloring the water of the Walkill River, at Hamburg. The complaint is that the defendant in its mining operations discharged into the river turbid and discolored water which affected the whole stream and rendered it unfit for making white tissue paper when it reached the paper mill of the complainant company. The answer alleges that the water of the river has always been unfit for use in making paper. This is denied on the part of the complainant, but the Vice-Chancellor holds this to be no defense, if true. The Vice-Chancellor also holds that to a bill by a riparian proprietor to restrain the defendant from polluting a stream, it is no defense or equitable excuse that the discoloration is the natural and necessary result of mining operations prosecuted in the ordinary way.

NEW MEXICO.

Taos County.

(From an Occasional Correspondent.)

Boston Gold Mining Company.—This company, in La Belle District, has been incorporated with a capital stock of $500,000, in shares of $1 each. The incorporators are: T. B. Andrews, Denver, Colo.; E. C. Van Diest, C. P. Casey, and C. E. Van Barneveld, of La Belle. The company owns the following properties: Montezuma, Montezuma No. 2, Boston and Criterion. They also have a lease and bond on the Hamilton. Development work is well under way. A contract has also been let for the sinking of a 100 ft. shaft, work upon which was begun last week.

Socorro County—Cooney Mining District.

(From Our Special Correspondent.)

Confidence.—The mill is treating 70 tons of ore per day. The contract on the main shaft is finished, the shaft being now 375 ft. deep. The winze sunk from the main tunnel is now down 100 ft.

Cooney Mine.—The lessees have started sinking a shaft at the mouth of the main tunnel. They have 18 in. of good copper ore.

Copper Queen.—The tunnel on the vein is now in 500 ft. The shaft is being pushed to make connection with the tunnel and is now down 250 ft. A 10-stamp mill has been ordered and the grading for the mill will commence at once. The ore will be treated by pan amalgamation.

Gray Hawk.—The Colonial Mining Company has leased and bonded this mine and has put a force of men to work taking out ore to be treated at the Maud S. mill. The ore is from 1 ft. to 3 ft. wide, averaging from $12 to $20 per ton, half of which is in gold.

Maud S.—There are 22 men doing development work on this property sinking and drifting. The main shaft is making a great deal of water, which is a good thing for the camp, as the scarcity of water for the mills has been the great draw back so far.

Silver Bar No. 2.—Mr. M. W. Neff has bought Geo. Sanders' interest in the lease on this mine. Development work is being pushed and some good ore is being taken out, which will be treated in the Cooney mill.

NEW YORK.

Rockland County.

Hillburn Granite Company.—This company has brought the Baker & Keegan quarry near Suffern,

and has begun to get out stone. The quarry is one of the best in that vicinity.

Washington County.

Williams & Edwards Slate Quarry.—Work is going on full time in these quarries and will continue at that rate as long as the weather permits. In addition to the old quarry the company has leased the interest of Mrs. M. J. Paul in the quarries just over the line in Wells, Vt.

OHIO.

Lorain County.

Elyria Stone Company.—The largest block of stone ever quarried in Ohio was taken out of this company's Grafton quarry a short time ago, says "Stone." The block is 6 ft. 7 in. by 14½ thick, making 283 cu. ft., and weighing 50,563 lbs.—over 25 tons. This immense stone was lifted from a hole 124 ft. deep by a derrick capable of handling 40 tons weight.

OREGON.

Linn County.

Blue River.—This camp lies on the headwaters of the Blue River on the south, and the head of the Calapooia on the north, and comprises quite an extensive district. Gold Hill, or Treasure Hill, is about six miles from the Mackenzie wagon road, at Blue River Bridge, and has two pack trails to the summit, and the mines are all around this hill. More work has been done this year than usual, and the outlook for the camp is good. The lowest on the hillside is the Lucky Boy mine, located eight years ago. This ledge is free milling on the surface, and averages from 6 to 10 ft. wide, handy to timber and water; assays from $6 to $60 per ton in gold, with a small percentage of silver.

Bohemia.—In this same range of mountains, 50 or 60 miles south of Quartzville, are situated the Bohemia mines, where two small quartz mills are now in successful operation, and two larger ones are going in.

Capital from over the sea is going into this county to develop the gold deposits of the Cascades, says the Portland "Oregonian." Over 75 men are at work developing the underground works of the quartz properties in Quartzville. The company is now putting up a 40-stamp mill.

PENNSYLVANIA

Anthracite Coal.

Charles F. King has been awarded the contract by the Lehigh Valley Railroad Company to build a large reservoir at Delano. The excavation, when completed, will form one of the largest water basins in this section. Its construction is prompted by the present drought which has been the most severe in the history of the company. The Catawissa and Hazle Creek reservoirs have heretofore been sufficient to tide the company over the dry season. During the present year they have hauled more water in railroad tanks from a distance than in the previous five seasons. It is believed that the new reservoir will relieve them in this respect, besides giving a bounteous supply for the town and the works of the company in that neighborhood.

The New York, Susquehanna & Western Railroad Company, through John G. Johnson as counsel, filed a bill in equity in the United States Circuit Court at Philadelphia, on November 16th, against the Delaware, Lackawanna & Western Railroad Company, asking to have the latter enjoined from prosecuting a suit against the Susquehanna & Western road, brought in the Supreme Court in New York. It was stated that the action brought by the Delaware, Lackawanna & Western Company is to have the Susquehanna & Western road restrained from delivering coal, for the transportation of which there is an existing agreement since February, 1882, to any common carrier, except the Delaware, Lackawanna & Western, and from any violation of the agreement. The Susquehanna & Western people explain that they have been informed by counsel that the agreement is void on account of being contrary to public policy. The Delaware, Lackawanna & Western, it is said, however, asserts its right to operate its trains and locomotives over tracks of the Susquehanna & Western road, and is said to have interfered with the safe operation of the latter road and with the duty that the latter owes to the public in the safe shipment and carriage of freight. The court is asked to grant a decree cancelling the contract made between the two companies on February 1st, 1882; to direct that the Delaware, Lackawanna & Western Company entirely remove its rails from the Susquehanna & Western road, and to enjoin the action brought in the Supreme Court in New York. The court is also asked to restrain the Delaware, Lackawanna & Western Railroad Company from interfering with Susquehanna & Western Company in carrying on the latter's railroad business. It is asked that a sale be made of the property constructed, jointly owned and used in carrying on the business under the agreement in question, and to have the distribution of the proceeds according to the respective interests of the two companies.

Bituminous Coal.

Sinnemahoning Iron and Coal Company.—Judgment for $54,204 was entered in New York City last week against this company, of Emporium, in favor of the Central Trust Company, for the balance due on a demand note for $76,362.

New York & Cleveland Gas Coal Company.—This company has made a contract with its miners, for one year from November 6th, whereby it agreees to pay them 59c. per ton. This is an increase of 9c. per ton for the men, but still falls 5c. short of the present rate. At the last conference between the operators and miners it was decided to fix the rate for this district definitely on the first Tuesday of December, and at the same meeting a resolution was passed by which both sides agreed that whatever rate the New York & Cleveland Coal Company adopted in December it should be the prevailing rate for the district. As the miners expected that the rate would be 69c. or more, it remains to be seen whether or not the resolution will be carried out. The conference between operators and miners is set for next week.

Northampton County.

Grand Central Slate Quarry.—This property has been leased by John Keat, John Wills, Thomas Miller and others of Bangor, who have begun operations and will equip the quarry with pump and machinery. The lease does not cover the section of the property already operated by the Grand Central Slate Company.

York County.

Baltimore & Peach Bottom Slate Company.—This company has abandoned its work on the Whittaker property and has concluded a lease of the Henry property near Delta. The company is now engaged in transferring machinery to the new workings.

Lloyd Quarry.—This property, at South Delta, has been leased by John S. Bull and others, of Baltimore, who intend to organize a company and operate on a large scale. The property includes 58 acres, and the quarry, which was first opened in 1815, has been idle for a number of years.

Peerless Slate Company.—This company is working steadily on its quarries at Delta, and is making arrangements to extend the workings.

SOUTH DAKOTA.

Lawrence County.

Moffit Mining and Milling Company.—This company expects to have its plant in operation shortly. The ore bins are now being filled with ore from the dump of the Golden Summit mine, situated near Lead.

TENNESSEE.

Marion County.

Wall Coal Mine.—This mine, at Kimball, is to be reopened and operated by E. E. Richardson, of Chattanooga.

UTAH.

Juab County.

The shipments from the Tintic district last week were: From the Bullion-Beck mine, 20 carloads of ore; Bullion Beck mill, 5 carloads of concentrates; Eureka-Hill mill, 8 carloads of concentrates; Centennial-Eureka, 2 carloads daily; Utah, 4 carloads of ore; Mammoth mine, 1 carload of ore; Mammoth mill, 1 bar of bullion; Ajax, 8 carloads of ore; Sioux, 2 carloads of ore; Dragon iron mine, 1 carload daily.

Junction No. 2.—A 7 ft. vein of ore was struck last week on the Junction No. 2 about 80 ft. in the drift which has been run from the bottom of the shaft. This property is being worked by Park City parties, who have done a great deal of work and are to be congratulated on at last seeing their reward.

Swansea.—General manager Hatfield of this property reports a good vein of ore in that property at a depth of 350 ft. This is beyond the depth at which the ore in the porphyry is commonly said to run out, says the Tintic "Miner." Samples of the ore, which is a galena, runs high in silver.

Tooele County.

Golden Coin.—This group, in Camp Floyd, was transferred last week by B. T. Lloyd to a syndicate of Philadelphia capitalists for a consideration of $35,000, payable in one year from November 13th. Last March Mr. Lloyd purchased the Golden Coin group of 9 claims for a small consideration. Since that time he has expended considerable money, and has run about 500 ft. of tunnels, and shafts in development work, and has found the ore in several places on the group. The property is regarded as promising, and is situated about 3,000 ft. to the northwest of the Golden Gate and adjoins the Eagle on the east.

Mercur Gold Mining Company.—This company has now in its employ 112 men in the mine and 25 in the mill, which is as many men almost as were employed in the entire district two years ago. The company passed the November dividend last week. The Secretary of the company announces that Capt. J. R. De Lamar has secured option on the stock at $7.50 per share, or $1,500,000 for the property. The purchase takes in all of the holdings of the Mercur company, including the mill and the Mattie 4 group of ten claims, recently purchased for $100,000, and the terms are that the stock shall be delivered over by January 1st, free from all debts and encumbrances. It is because the company found itself with a heavy debt on its hands in the addition to the mill, the purchase and development of the Mattie 4 group and the extension around to this group of the Mercur railway, says the Salt Lake "Tribune," that the November dividend was passed, the necessity of paying off these debts before January 1st, being present before the directors.

VIRGINIA.

Allegheny County.

Lowmoor Iron Company.—This company owns and has in operation four iron ore mines, Low Moor, Dolly Ann, Iron Mountain and Stack. The Low Moor mine has been worked for about 15 years. The ore production at the Dolly Ann and Iron Mountain mines has been short recently on account of the lack of water. However, there has been completed a 6-in. pipe line from the washer at Dolly Ann to Jackson River, through which water will be pumped a distance of 2½ miles. These two mines, when worked to their full capacity, produce about 600 tons of ore per day. At Stack mine, 18 miles west, on the main line of the Chesapeake & Ohio, there is being built a new washer with a capacity of 200 tons per day. The limestone quarry at Low Moor is being extensively worked. It is all underground work and the roof is supported by columns of limestone. Compressed air is used to run the drills, the air being supplied by a pipe line leading from the furnace to the quarry. Fifty men are employed in the quarry in charge of B. J. Shirkey. About 300 tons of limestone are quarried daily.

Rockbridge County.

Glasgow Development Company.—This company has let a contract for taking out iron ore from its mines at Midvale to L. E. Waugh. The mine is connected with the Norfolk & Western Railroad by a tramway 6,000 ft. long, with a fall of 1,200 ft.

WASHINGTON.

Kittitas County.

Blewett.—Fire at this mine two weeks ago destroyed the concentrating, cyanide and electric plants and part of the mill. The fire originated from an explosion of hot asphaltum, with which the concentrate tanks were being painted. The concentrating works were close to the mill, to which flames at once communicated, and James A. Gilmour was struck and cut by a falling window. The Blewett Milling Company loses about $1,000, and Dolan & Thompson, lessees of the mine, lose $1,500. They had just completed the cyanide plant.

FOREIGN MINING NEWS.

BRAZIL.

St. John Del Rey Mining Company.—This company reports for the month of October an output of 2,940 oz. gold. For the 10 months ending October 31st the total product was 31,095 oz. gold, an average of 3,110 oz. per month.

BRITISH COLUMBIA.

St. Elmo.—This mine is now working two shifts, and the tunnel is in a distance of 125 ft. They are into about 6 ft. of ore that shows up well in copper and gold.

Trail Creek.—The machinery for the Center Star and the Robert E. Lee mines has arrived at Trail. This will make five mines in the camp supplied with all the necessary machinery for rapid and effective work in developing the properties. The Crown Point and Iron Horse have also ordered machinery and it is now on the way. The shaft on the Commodore is down 47 ft., and is reported to have struck ore.

(From Our Special Correspondent.)

The town of Rowland, which is yet unincorporated, has commenced work on its proposed water-works system. It is intended to flume the water from Stony Creek.

Golden Hill.—This property, which is owned by R. J. Daniels and others, is preparing for active winter operations. There is now a good force of men engaged in development work.

R. E. Lee.—Some of the machinery belonging to the R. E. Lee and the Maid of Erin has been received and put in its place. Ore will be shipped from these mines shortly.

Rossland.—The camp has gone into winter quarters, the first snow for the season having fallen November 13th. One of the most experienced mining men here says that much of the future of this camp depends upon what will take place in the practical operations of the War Eagle and Le Roi mines in the next 6 months. There is, he says, no question that this particular portion of British Columbia is well mineralized. Should the gold and silver decrease in quantity with depth, he thinks it not improbable that the percentage of copper will increase. Much also depends on the results obtained in the next few months by such mines as the Robert E. Lee, Maid of Erin, Crown Point, Homestake, Deer Park, Iron Horse, Cliff, Evening Star, Center Star, North Star, St. Elmo, Jumbo, Golden Hill, Kootenay and Columbia. Of these the last named ten are on the now famous Red Mountain and vicinity, and all of them have been sufficiently developed to be classed as mines.

War Eagle.—For some days past all of the low-grade ore from the War Eagle and the Le Roi mines has been hauled to Trail Creek Landing for treatment in the new smelter, which is now about half finished. The work on the extension of the War Eagle has assumed large proportions, and a strike of high-grade ore was made a short time ago.

ECUADOR.

Ecuador Gold Mining Company.—This company has been organized to work gold placers adjoining on the west the property of the Playa de Oro Mining Company. The officers are Joseph D. Baucus, president; George Du Relle, vice-president; E. M. Hoagland, secretary; E. N. Cravath, treasurer, and John P. Petty, general manager. This property has been favorably reported upon by the engineers

sent down to examine it. Machinery has been ordered and will be shipped next month.

Playa de Oro Mining Company.—Since the virtual reorganization of this company, notice of which was given in the "Engineering and Mining Journal" of October 19th last, work has been pushed on the property and a cablegram was received this week stating that the supply of water was abundant, and that up to November 10th they had worked 413 hours. Mr. John P. Petty has gone to the property as consulting engineer. He will meet in Panama Mr. Henry F. Lefevre, assistant engineer and metallurgist, who has been on sick leave, and they together will proceed to the property and superintend the clean-up. Mr. C. Van Isschot, also consulting engineer for the company, who is now at Guayaquil, will join Messrs. Petty and Lefevre in their work. It is understood that more working capital has been secured by the new management, whose intention it is to push work energetically on these properties.

INDIA.

Colar Gold-field, Mysore.—The following are the returns from the leading companies for the month of October: Champion Reef, 5,891 oz. gold; average return, 1·21 oz. per ton. Mysore, 4,337 oz. gold; average return, 0·82 oz. per ton. Nundydroog, 3,177 oz. gold; average return, 1·13 oz. per ton. Ooregum, 4,883 oz. gold; average return, 1·01 oz. per ton.

NEW SOUTH WALES.

The White Cliff opal fields, near Wilcannia, are not yet worked out, though they have decidedly retrograded of late, says the "Australian Mining Standard." Three tributers went into an old hole which had been abandoned. They sank a few feet deeper and came straight onto the patch. The quantity already turned out is said to be considerably over 100 oz. The quality is good, and there is every probability of the parcel being much larger, as opal is showing well in the walls of the shaft. Several small finds are also reported from different parts of the field. The number of four-acre blocks has considerably increased, and after the shearing season the population is expected to be largely added to.

NEW ZEALAND.

As evidence of the mining revival in this colony, the "Australian Mining Standard" gives the following particulars of the application for mining areas lodged with the Thames district warden: During the month of August the total number of applications received were 109, representing a total area of 5,098 acres of land. Of these 59 were for special claims, covering 5,109 acres; 24 were for licensed holdings, covering 589 acres; 19 were for water rights and 7 for machine sites. The total amount of money paid on behalf of these applications was £1,939, of which £1,582 was for special claims, £307 for licensed holdings, £34 for water rights and £16 for machine sites. The districts covered by the applications include the Thames proper, Tapu, Tairua and Whangamata, but the largest proportion of the area applied for is located on the Thames goldfield itself. The country is reaping an immediate benefit from this improvement. On the authority of Mr. Wilson, the mining inspector, it is stated that at the present time fully 700 men are employed in connection with this industry in one district where twelve months ago not more than 300 were at work. Another pleasing feature about the revival is the disposition to touch other metals than gold. A large copper property situated at the northern end of the Great Barrier Island has just been acquired on behalf of an English syndicate. The area comprises nearly 13,000 acres.

The Minister of Mines has been approached by those interested in prospecting for quicksilver at Ohaewai, Bay of Islands, where a company has been carrying on operations for some time, spending a large amount of money. However, owing to various adverse circumstances the capital at their disposal has proved insufficient to insure the complete success of the venture. Information has been received from Mr. C. A. Harris, who is now in England on business connected with the Thames mines, that if reasonable assistance would be given by the Government an English company was ready to take over the present works. The offer was duly placed before the Cabinet by Mr. Cadman, and the Government has now agreed to give a bonus of 4d. per lb. for the first 100,000 lbs. of quicksilver produced in the colony. This offer is not, of course, confined to the locality above mentioned, but is open to the whole of New Zealand. To secure this bonus a very considerable expenditure and extensive works will have to be undertaken.

NOVA SCOTIA.

Coxheath.—According to Halifax advices the Coxheath copper mines are to be reopened and operated on a larger scale. The company proposes to build a railway from the mines to the site of the proposed shipping pier at the head of the northwest arm of North Sydney harbor. The proposed railway is to be of standard gauge. As the original location, as made by John Page, of Boston, some years ago, was for a narrow gauge road, this will necessitate an almost entirely new location and to this end the company has employed Mr. C. M. O'Dell Civil Engineer, to re-locate the line throughout, making both a grade crossing and a junction with the Intercolonial Railway at Campbell's Brook. It is the company's intention to erect smelting works on the Grantmyre property from plans which are now being prepared by Dr. E. D. Peters and Mr. Brown, of Chicago, who lately visited the works. The mines are owned almost wholly by Boston and New York capitalists.

SOUTH AFRICA.

Transvaal.

Geldenhuis Deep Level Gold Mining Company.—This company is the first of the so-called deep level companies of the first range whose shaft has reached the reef or blanket bed at the lower levels, and which is in a position to become a producer. A large amount of money has been expended on the works. The shaft is fitted with hoisting and pumping machinery of the latest patterns. The company has a mill of 100 stamps completed, and a cyanide plant also, and work has been begun on the erection of 100 additional stamps. The plant is arranged for the discharge of the tailings from the mill directly into the cyanide vats. The mill began work experimentally the last week in October, but will hardly be regularly at work before the close of November.

LATE NEWS.

Mr. J. Parke Channing, mining engineer, of New York, has gone to Duluth, Minn., on professional business; he will be absent for several weeks, but mail matter addressed to his New York office will reach him.

The gold production of Queensland for the nine months ending September 30th is reported at 453,531 oz. There has been a decrease this year owing to the long drought which prevailed through the Australian winter.

At the last meeting of the New York section of the American Chemical Society, which was held in the hall of the Mott Memorial Library, New York, a paper by Prof. W. P. Mason on the "Chemical vs. the Biological Examination of Water" was read. Dr. Horne described an interesting case of large increase of nitrites on mixing three water supplies, the nitrites being low in each of the waters tested separately. A paper "On the Heat of Solution of Certain Carbon Compounds" was read by Prof. C. L. Speyers. Dr. Austen read a "Note on Runge's 'Bildungstrieb' of Substances," and exhibited a copy of this old and rare work. Mr. Cutts read a paper by T. S. Gladding "On the Gravimetric Method of Determining Phosphoric Acid by the Phospho-Molybdate Method." Specimens showing the effects of gun cotton explosions were exhibited by Mr. W. H. Burleigh.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Nov. 22.

PRODUCTION OF BITUMINOUS COAL, in tons of 2,240 lbs., for week ending Nov. 16th, and year from January 1st:

	1895. Week.	1895. Year.	1894. Year.
Shipped East and North:			
Alleghany, Pa.	45,825	2,974,390	1,971,295
Barclay, Pa.	1,100	39,625	$ ...
Beech Creek, Pa.	60 525	2,072,075	1,767,957
Broad Top, Pa.	13,350	375,450	321,628
Clearfield, Pa.	91,225	5,171,542	2,322,849
Cumberland, Md	70,504	2,926,796	2,612,792
Kanawha, W. Va.	185,225	2,990,215	2,395,905
Phila. & Erie R. R.	775	51,910	65,891
Pocahontas Flat Top	$	$	3,026,425
Total.	368,529	16,601,803	14,174,760

‡ Week ending Nov. 7th. $ Returns not received.

	1895. Week.	1895. Year	1894. Year.
Shipped West:			
Monongahela, Pa.	19,350	765,736	588,413
Pittsburg, Pa	37,300	1,661,901	1,276,794
Westmoreland, Pa.	45,075	1,716,624	1,422,394
Total.	101,725	4,144,261	3,287,601
Grand total.	470.254	20,745,064	17,462,361

Production of coke on line of Pennsylvania Railroad for the week ending Nov. 16th, 1895, and year from January 1st, in tons of 2,000 lbs.: Week, 144,049 tons; year, 5,142,860; to corresponding date in 1894, 3,053,453 tons.

Anthracite.

There is very little change to report of the anthracite coal market this week. There is an air of expectancy about it, as if the trade were waiting for something to "turn up," but the chances seem decidedly in the buyers' favor.

Since the local demand is small, and confined to small orders for prompt delivery, sellers continue to devote their attention to the western market. In view of the approaching close of navigation, the companies and operators are finishing up their business. The demand for stove and nut keeps up in the west, and shipments have been pretty heavy.

In the local market buyers seems to go on the principle that as the chances of a decline in prices are greater than those of an advance, it is well to wait. A few orders for immediate delivery have been placed, but as a prominent seller expressed it, "from now on the trade must look forward to the weather and the Reading reorganization."

The supply now is equal to the demand. Statistics of production are unfortunately wanting, but from the statements of the various officials it may be assumed that none of the companies has deemed it necessary to restrict as yet. This fact is reflected on the easier tone of the market. Prices are not appreciably lower than last week but buyers find less difficulty in obtaining concessions from the so-called "circular." We quote the following as being fair prices to-day, that is, prices which may be obtained readily: Stove, $3.80@$3.85; egg and chestnut, $3.45@$3.50; broken, $3 10@$3 15, all on board. Possibly lower figures might be obtained; but the order would have to be "desirable," which nowadays means more than one cargo.

The dullness of the local market emphasizes what we have claimed all along, namely, that the market has no backbone. There is an air of restiveness about most of the companies which augurs ill for the future stability of the trade. Sellers are already beginning to take gloomy views of the situation. That easier and lower prices will prevail within two or three weeks hardly anyone doubts, and so far as can be judged the only thing that can avert a considerable decline is an improved demand. Inasmuch as the latter can arise only from cold weather the eyes of the trade are fixed on the thermometer and the "weather indications."

The reorganization of the Reading is reported as progressing. Perhaps if this old mother of coal combinations were on a new basis, some agreement might be reached by the anthracite interests. But, as yet, no step toward a general "understanding" has been taken.

Bituminous.

The soft coal trade is very dull, and there are scarcely orders enough to keep producers even moderately busy. There has been a considerable decrease in tonnages, but it must be borne in mind that owing to the recent good weather shipments have been unusually heavy.

The Sound and points east of Cape Cod continue to take the greater proportion of the coal going forward, though the all-rail business shows a considerable increase. Prices are nominally unchanged. We quote f. o. b., at the various ports, as follows: Norfolk and Newport News, $1.90@$2.15; Baltimore, $2@$2.20; Philadelphia, $1 75@$2.20; New York harbor shipping ports, $2.20@$2.65; alongside New York harbor, $2.50@$2.75; alongside Boston, $2.75@$3.

Transportation from mines to tide is only fair, but as orders are scarce, it is sufficiently good for present requirements. The car supply is good on some roads and poor on others. Complaints are numerous from the all-rail trade.

Vessels are again scarce, but the demand for them is not great, and no one suffers much. Light draught craft are in particularly short supply, but this is not felt, as most of the orders for shoal water points have been filled. We quote the following rates from Philadelphia: To Boston, Salem and Portland, 80c.; Providence, New Bedford, New Haven, Bridgeport and other Sound ports, 70c.; Wareham, 90c.; Lynn, $1@$1.15; Newburyport, 95c.; Portsmouth, 85c.; Dover, $1.25; Saco, $1.10; Bath, 90c.; Gardiner, $1.25@$1.30; Bangor, $1.25; towage where usual. From Norfolk, Newport News and Baltimore rates are from 5 to 10c. higher.

Buffalo. Nov. 21.

(From Our Special Correspondent.)

The canals of the State of New York will be closed on December 5 unless sooner closed by ice.

The anthracite coal business is active and prices unchanged. The movement by lake westward continues good.

Bituminous coal is in good demand at unvaried quotations, which are only a shade higher than cost at mines and rail transportation, much to the chagrin of dealers who complain bitterly of the state of affairs prevailing.

Lake freights are firm on coal, with shippers hurrying it forward as the near close of navigation warns them of the necessity of so doing. It is expected that the movement for 1895 will exceed that of 1893 and equal that of 1894.

Coke is active and firm.

The shipment of coal westward from Buffalo by lake from November 10th to 16th, both days inclusive, aggregated 124,240 net tons distributed as follows: 43,150 tons to Chicago; 22,150 tons to Milwaukee; 19,600 tons to Duluth; 2,525 tons to Toledo; 17,300 tons to Superior; 2,015 tons to Racine; 1,400 tons to Ashland; 1,500 tons to Saginaw; 300 tons to Osceola; 350 tons to Alpena; 2,100 tons to Gladstone; 1,040 tons to Washburn; 850 tons to Bay City, and 10,000 tons by vessels from Tonawanda, destination not reported. The rates of freight were: 100c. to Racine, 90c. to Chicago, 85c. to Milwaukee, 80c. to Maintown, 60c. to Saginaw, 50c. to Toledo, Bay City, Alpena and Osceola, 40c. to Marine City and Port Huron, and 30c. to Duluth, Superior, Gladstone, Washburn and Ashland. Closing firm.

The disasters on the lakes for the year ending June 30th, 1895, aggregated 233. Ten vessels were a total loss and 10 lives were lost.

Lifting locks, it is said, will take the place of the present 10 locks on the Erie Canal at Lockport.

The weather was mild for several days until Wednesday, when the wind was quite strong with snow flurries and frost. Last night and to-day severe cold prevails.

Chicago. Nov. 20.

(From Our Special Correspondent.)

Anthracite.—Hard coal is a little more plentiful than it has been because the demand from the West has slackened considerably owing to the advance in freight rates. It is still very scarce, however, especially in all-rail. Dock coal is also scarce, although vessels have been coming in rather more freely. It is very probable that dealers will find their receipts until the close of navigation will not be sufficient to fill the demand, and they will have to depend largely on all-rail shipments during the winter. The mild weather has had some effect upon the demand and has caused general inquiry to

be a little smaller. Prices are very firm and it is expected will remain so, possibly going higher.

Bituminous.—The mild weather has caused a very material falling off in the demand in the past week or 10 days, but very few operators are getting all the soft coal they can use. The mines in Indiana and Illinois are very short of laborers and nearly all of them could use a good many more men. The miners in the Hocking Valley region have repudiated the arbitrators' decision as to the mining scale, and it is probable that this may cause a strike there. In that event prices will probably be higher and this particular coal will be hard to get.

Pittsburg. Nov. 21.

(From Our Special Correspondent.)

Coal.—The coal trade presents nothing worthy of special mention. The fact is, outside the local trade, which is very active, we have no business. The weather-man is no good; we have been promised water for some time—water, however, has not yet made its appearance. Fully 36,000,000 bushels coal is now waiting shipment; how long it will have to wait is another question. When the rise comes not more than a third of this amount can be moved on one run. W. H. Brown & Sons have loaded 131 coal boats in the pools, which will not be moved the first rise; they have also 150 barges in the harbor that will be started on the first rise. Nearly the same condition of affairs exists among the other big companies. No trouble is anticipated in formulating terms for digging next year; uniformity has almost been established, every effort has been made to avoid trouble and misunderstanding in regard to the future in the Pittsburg district. Much good has been accomplished since the joint meeting held in October. A late and important announcement is that at a meeting last night a convention was called for December 2d. It is said that 65c. per ton will be asked.

Connellsville Coke.—The business of the week reached high-water mark by a big majority and was a record breaker; production was the largest in the history of the region. Shipments show an increase of 187 cars for the week; the week's production amounted to 165,959 tons, 1,334 tons larger than the week previous. Every plant and every active oven was made to do the best time possible. From the scarcity of water five plants held down production some or a still better time would have been made. The car supply continues to be short, but has been gaining some the last three weeks; railroad officials say that another three weeks will see a better car supply and probably sufficient for all needs of the Connellsville region. The outlook in the coke trade is indeed very bright and operators feel greatly encouraged. The demand and consumption for Connellsville coke was never so great; the price of coke is now ranging a little low, but unless there is a big dropping off in the iron business coke will be advanced to $2 the first of the year and most certainly hold at that figure for a long time to come. The Frick Company has gotten control of sufficient of the business to regulate both price and production. The shipments of coke from the regions in cars for the week reached 9,743 cars. To Pittsburg and river points, 2,531 cars; to points east of Evenson, 1,942 cars; to points west of Pittsburg, 5,270 cars.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Nov. 22, 1895.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Nov. 23 1895.		Week ending Nov. 22, 1895.		From Jan. '94.	From Jan., '95
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
Anthracite.	57	18,930	58	76,950	763,914	1,091,668
Coke...	126	141,402	156	180.160	4,543,515	6,981.174
Charcoal...	23	4.743	24	5,099	194,968	197,905
Totals ...	186	165.138	238	221 609	5,505,397	8,170,147

The iron market is still to a considerable extent a waiting one. The principal feature of the week has been the sales of Bessemer pig and steel billets in Pittsburg at lower prices than have been recorded for some time. These sales have been, we understand, largely of speculative holdings, though in some cases they have been made by concerns which have just started their plants and are anxious for business. While the reduction has not extended to other kinds of iron, the quotations have encouraged buyers to hold out a little longer. On the other hand, the fact that stocks of raw iron are low, in spite of the large production, is in makers' favor; and furnace men generally seem to believe in a continued heavy demand.

The season for shipping ores from the Lake Superior region will close this week or next. Some figures given elsewhere show how large the increase in output has been this year. The full statements for the season will not be made up for two or three weeks yet.

Foreign iron ores continue to come in, and in addition to Cuban and Spanish ores we note this week one cargo from Algeria.

A feature of some importance is the large number of orders for new cars reported. The railroads are in many cases in need of new rolling stock, and the improvement in earnings is putting them in a position to buy. The orders in question will require in the aggregate a large quantity of iron.

NOTES OF THE WEEK.

The second annual convention of the National Hardware Association, whose members are large consumers of iron and steel, was held in Pittsburg this week. The reports generally indicated an active and prosperous condition of business.

At a meeting in Chicago, November 20th, of the Western Steel Association it was decided to increase the price of steel casting, based on the increase in cost of iron. Before making any announcement a conference will be held with the Eastern Association, which first made the proposition of an increase.

The Merchant Bar Iron Association met in Chicago, November 20th, and decided to make no change in prices at present. The existing scale was reaffirmed.

A despatch from Marquette, Mich., November 21st, says that all uncertainty as to the construction of the new ore railway from Ishpeming to Marquette has been removed by the official statement that the contract had been let to Winston Brothers, of Minneapolis, for the construction of 15 miles of road, terminal tracks, freight and passenger depots and an ore dock. The contract is to be completed by the middle of next June, and work will be begun at once.

THE LOCAL MARKET.

The market is quiet, though the demand for small lots continues steady. There is no decrease in the activity of shops and foundries. A good deal of iron is going forward to New England points, shipments being hurried up to take advantage of water rates. We hear of no contracts of importance for next year's delivery, and the waiting policy still rules.

Pig Iron.—There is a good demand for small lots, and no particular urgency to secure business. Less disposition is manifest on the part of sellers to make concessions. The slightly under-grade irons, to which we have referred in previous weeks, are generally out of the way, and for standard makes prices are well maintained. The lower grade irons are in especial demand just now, many foundries wanting them in the absence of scrap for mixing. We cannot note any change in prices.

We quote, for Northern brands, No. 1 $13.75@$14.25; No. 2, $12.75@$13.25 gray forge, $12.50@$13. Southern iron, No. 1 foundry, $13 75@$14; No. 2 foundry, $13 25@$13.75; No. 1 soft, $13.75@$14; No. 2 soft $13.25@$13 75; forge, $12.50@$13. All prices are for tidewater delivery.

Cast Iron Pipe.—The setting in of cold weather has put a stop to nearly all work where pipe is needed. Some large contracts may be placed, but the bulk of local orders will be postponed now until Spring approaches.

Steel Billets.—The market is dull with few sales. The reports from Pittsburg are somewhat unfavorable, and we quote billets this week $21.50@$22. at tidewater. Rods are also a shade lower, say $30.50@$31.

Spiegeleisen and Ferro-Manganese.—Business has been light, and no large sales are noted. We continue to quote $25.50@$26 for spiegeleisen, and $52@$52.50 for ferro-manganese.

Merchant Iron and Steel.—Sales are fairly steady, and there is nothing of importance to note. We quote: Bessemer machinery, 1·50@1·65c.; open-hearth, 1·60@1·75c.; soft steel bars, 1·40@1·45c.; steel hoops, 1·60@1·75c; steel axles, 1·60@1·80c.; links and pins, 1 70@1·80c.; tire steel, 1·85@1 90c.; spring steel, 2·10@2 25c. Bars are 1 35@1·45c. for common and 1·50@1·65c. for refined.

Structural Iron and Steel.—We continue to hear of plans for new buildings, and a good demand for material is probable for some time to come. Quotations are steady; angles, 1 65@1 80c.; channels, 1·80@1 95c.; tees, 1 85@1·95c.; beams up to 15-in., 1·75@1 90c. for large orders, and 2@2·15c. for smaller lots.

Plates.—While there is a fair demand, orders are not pressing and prices are a little lower. For steel plates we quote: Tank, 1·70@1·85c.; boiler shell, 1.95@2·10c.; flange, 2·10@2·25c.; firebox, 2·50@2 75c. Universal mill plates are 1·75@1·90c.

Steel Rails and Rail Fastenings.—Standard sections are quoted without change, $.8 per ton at mill, and $28.75 at tidewater. For street rails more inquiry is noted. There are several local contracts of some importance to be let soon, and negotiations for some of them are said to be pending. Rail fastenings continue in good demand. We quote for fish and angle-plates, 1·45@1·50c.; spikes, 1·80@1·85c.; bolts, square nuts, 2·10@2·25c.; bolts, hexagon nuts, 2·20@2 35c.

Old Rails.—Old iron rails are not heavily dealt in here, but some recent sales are noted at prices equivalent to $13.50@$15 delivered at dock in the city. Old steel rails are not in demand.

Scrap.—Foundry scrap continues in demand. It is difficult to fix prices, as scrap is usually handled, but we quote $10.50@$12, according to quality and size of order.

Chicago. Nov. 20.

(From Our Special Correspondent.)

Buyers and sellers of iron and steel are still quite a good way apart in their ideas as to the prices that should prevail, the former claiming that quotations will undoubtedly be lower before the first of the year, while mill and furnace representatives feel very firm in their views, and in fact are inclined to believe that prices will advance shortly after the first of January. Business in the last week was very light in all classes of material except bars.

Pig Iron.—Only a small business has been done in pig metal in the last week, although some dealers report a slight increase in demand. One and two thousand ton lots of Southern iron are reported as having been sold, but aside from this all business closed was in lots of carloads to 100 and 200 tons. As yet no contracts have been placed for delivery in 1896, and it is not expected that any very large ones will be given out before the middle of December. Quotations are unchanged as follows: Lake Superior charcoal, $16; Lake Superior coke, No. 1, $15@$15.50; No 2, $14.50@$15; No. 3, $14@14.50; local Scotch No. 1, $15; No 2, $14.50; No. 3, $14; Jackson County silveries, $15 50@$16; Southern coke, foundry, No. 1, $14.25; No. 2, $14; No. 3, $13.75; Southern soft, No. 1, $14.25; No. 2, $14; Southern car-wheel iron, $17.50; Southern silveries No. 1, $15.25; No. 2, $15; Tennessee charcoal No. 1, $13@$13.50; Bessemer, $18. Ohio strong softeners, $15@$15.50.

Structural Material.—The tonnage closed last week was rather smaller than that of the previous week, but at the same time a fairly good business was done. The largest order of the week was one calling for 500 tons for the Milwaukee Public Library, placed with a Pittsburg mill. Quotations are as follows: For universal plates, 1·80@1·85c.; beams and channels, 1·90@2c; angles, 1 85@1·90c; tees, 2@2·10c.

Merchant Steel.—Business has been rather dull with local dealers both in orders from store and for mill shipment. It is not expected that any increase of demand will be experienced before the first of the year. Prices are firmly maintained as follows: Tool steel, 5@7·50c.; Bessemer bars, 1·65@1·75c.; smooth finished machinery, 1·95@2c.; tire steel, 2·20@2·25c.

Bar Iron.—Car works ordered several round lots of iron the past week, among them being one contract for 2,000 tons. Other orders are in prospect from the same line of work, and will undoubtedly be placed soon. General business has been fairly good, although no large orders were taken. Quotations are maintained at 1·50c. for common iron and 1·60c for refined. Soft steel bars are quoted at 1·60c. to 1·70c., although it is reported that they are selling at a trifle under these figures.

Billets and Rods.—The local market has been very quiet, and no orders of any importance were closed last week. Quotations are nominally $31 for rods and $24 for billets.

Steel Rails.—A fair week's business has been done by the local mill, in small lots. No particularly large orders were closed, and it is hardly probable that any will be placed for the next month. Quotations are maintained at $29 and upward, according to specifications.

Cleveland, O. Nov. 21.

(From Our Special Correspondent.)

The conditions of the local iron market are not such as to infuse much life or interest into the ore trade. Pig iron is weaker.

On a strong market the ore consumers are prone to look sharply ahead for their material, but with prices declining this forehandedness is absent.

Ore dealers, however, at this time are not looking for any transactions, and are wholly satisfied with the lifelessness of trade, or rather with the absence of inquiries, for no matter how great the demand might be there is now no more ore for sale that can be brought down this season.

Shipments have practically closed on Lake Superior, where severely cold weather now prevails. From Escaraba the ore movement is still very active, although a freezing spell has temporarily delayed loads. Shippers from that port are still looking for vessels and chartering quite freely. The rate has fallen from $1.10 a week ago to $1. This business, however, consists almost entirely of ore sold early this year, the delivery of which was prevented by the miners' strike.

The total shipment of ore this year will approximate 10,000,000 tons and may even exceed that figure. The receipts at the five Lake Erie ports in the Cleveland district—Cleveland, Ashtabula, Fairport, Lorain and Conneaut—reached 758,948 tons in October, against 973,977 tons in September. The receipts at these ports for the season to November 1st, were 5,795,836 tons. For the entire year 1894 they were 4 902,471 tons. Ore has been coming forward so far this month almost as fast as in October. The official figures of the ore shippers show a total movement of 9,346.741 tons up to November 1st, as against 7,046,928 tons for the corresponding period last year. With another week of fair weather the output will considerably exceed 10,000,000 tons.

Prices for next year are still in the foreground. Shippers have nothing to say about them except that the subject will perhaps not be settled until some time after navigation closes. Neither has any basis been reached for lake rates next season. The vessel-men are still disposed to ask $1.25 for the season from Duluth, but the shippers anticipate charters below that figure.

No sales of ore were reported this week. Nominal prices are as follows: Standard specular Bessemer's, $4.75@$5; standard hematite Bessemer, $4.25@$4.50; standard specular non-Bessemer, $3.75@$4; standard hematite non-Bessemer, $3.25@3.50.

Pittsburg. Nov. 21.

(From Our Special Correspondent.)

Raw Iron and Steel.—Business during the week was of small volume and not generally so active as

it was last month. The industries as a rule are fully employed on orders taken during the active season, and the slackening of new demand, which is natural after the rush of business since July, has not yet caused any important stoppage of machinery. Complaints about the scarcity of cars and the favorable reports of the earnings received if the railroad companies continue to attest the activity of the tonnage movement. The lull in the demand for iron and steel products has continued to exert a weakening influence on the markets and, furthermore; concessions have been made in prices of Bessemer pig and billets and some kinds of finished materials. There are prices on paper which until recently were prices that buyers had to pay, but at present there are special prices varying according to quality, delivery, terms of payment, condition of the order books, etc. For pig iron the market is dull and weaker as regards prices. The unsettled condition of steel and the late decline in prices casts a shadow over the entire market, but the effect on prices of neutral irons is only fairly marked.

For all practical purposes, it may be said, the entire situation shows but little change from the preceding week. Prices are lower, the demand is no better, the pressure to sell is no greater and it is believed that furnace banks are kept in pretty nea ly the same condition as for some time past. Under these circumstances there is little upon which to base predictions in regard to the future; all that can be safely said is that the market about holds its own. Sales of all descriptions of iron and steel have been very much restricted, consumers purchasing only such amounts as is required to complete present orders that are booked for this year's delivery. Prices for 1896 are firm and are certain to rule higher than were given the market, as all materials used in the manufactures are certain to cost more money; how much more is an unsettled question and will be learned later. The Cleveland papers last week boasted that Tom Johnson, of Lorain, had secured a Pittsburg contract for 1,600 tons of street rails, but neglected to state that Johnson's 101 patents do not allow any other maker in the country to make the particular kind of rail specified

The close of the market was quiet; prices just now very uncertain. Bessemer, at Valley furnace, being offered at $12.50@$13. Prices still on the down grade.

COKE SMELTED, LAKE AND NATIVE ORE.	
Tons.	Cash.
1,000 Bessemer, Nov., Dec., Pittsburg	$13.60
1,000 Bessemer, Dec., Pittsburg	13.75
1,000 Bessemer, Nov., Dec., Valley	12.50
1,000 Bessemer, Dec., Pittsburg	13.50
1,000 Bessemer, Dec., Valley	12.75
500 Bessemer, Nov., Dec., Pittsburg	13.60
500 Gray Forge, Dec., Pittsburg	12.25
500 Gray Forge, prompt, Pittsburg	12 30
500 Gray Forge, Dec., Pittsburg	12.40
100 No. 1 Silvery, Pittsburg	14.80
100 No. 2 Silvery, Pittsburg	13.80
50 No. 2 Foundry, Pittsburg	14.00
50 No. 1 Foundry, Pittsburg	14.60
25 No. 2 Foundry, Pittsburg	13.75
25 No. 2 Foundry, Pittsburg	13.75
25 No. 1 Mill, Pittsburg	13.00
25 No. 1 Foundry, Pittsburg	14.25
CHARCOAL.	
100 Cold Blast	$24.00
50 No. 1 Foundry	17.80
50 No. 2 Foundry	17.25
50 Cold Blast	24.00
BLOOMS, BILLETS AND SLABS AT MILL.	
1,000 Billets, Nov., Dec., at mill	$19.50
1,000 Billets, Dec., at mill	19.25
500 Billets, Dec., at mill	20.00

Tons.	Cash.
500 Billets, prompt, at mill	20.00
500 Billets, Wheeling	18.50
SHEET BARS.	
300 Delivered	$24.00
STEEL WIRE RODS.	
500 5-gauge, at mill	$28.50
FERRO-MANGANESE.	
100 80%, Delivered	$54.00
BLOOMS, BILLETS AND BAR ENDS.	
350 Billet Ends	$15.00
MUCK BAR.	
500 Neutral, deliv	$21.50
SPELTER.	
50 Prime Western	$3.75
SKELP IRON.	
300 Sheared	$1.60 4 m.
200 Wide gr'v'd	1.45 4 m.
150 Nr'w gr'v'd	1.45 4 m.
SKELP STEEL.	
500 Nr'w gr'vd	$1.30 4 m.
350 Wide gr'vd	1.30 4 m.
325 Sheared	1.50 4 m.
OLD RAILS.	
1,000 Short Steel Rails, Pittsburg	$15.50
500 Mixed Steel Rails, Pittsburg	15.50
500 Iron Rails, at Youngstown	18.00
500 Iron Rails, Nov., Dec., Jan., Del., Youngstown	18.10
SCRAP MATERIAL.	
1,000 Heavy Steel Scrap gross, Pittsburg	$15.00
500 Old Car Wheels, gross, Pittsburg	12.00
300 No. 1 Wrought Scrap, net	15.00
200 Wrought Turnings, net, Youngstown	9.00

Philadelphia. Nov. 22.

(From Our Special Correspondent.)

Pig Iron.—The average user of iron does not see that now is the time to buy iron for the winter. Brokers and furnace-men are more inclined this week to make concessions than they have been for months, but while flat offers for iron are not made, quotations are allowed to remain at $14 for No. 1, $13 for No. 2 and $12@$12.75 for forge. Makers recognize that the present heavy consumption must sooner or later be reflected in a heavier demand.

Steel Slabs and Billets.—Prices continue to sag. Makers keep up a bold front for winter deliveries, but buyers are satisfied better terms could be had if they made a square offer. Less than $21 will buy to-day. Higher prices are asked for January. A fair week's business has been done in small orders.

Merchant Iron.—Capacity has been curtailed slightly rather than accumulate stocks. Buyers are less urgent and prices are weakening. Refined iron is quoted 1·35 at mill. The outlook is encouraging for the winter.

Nails.—Nails are sold on a tide-water basis of $2.30 in ordinary lots. Business is not particularly active.

Skelp.—To-day's quotation for skelp is 1·35 delivered, but lower quotations are probable on account of the capacity available for incoming work, which is not particularly encouraging.

Sheet.—An occasional large order comes along to encourage manufacturers. A fair amount of work is done in a small way. Store deliveries are large. Prices are made to suit buyers.

Pipes and Tubes.—The late orders are for larger lots than we have been having. The tendency of quotations is decidedly in favor of buyers.

Plate and Tank.—New work comes in sight and disappears again. Buyers do not believe present quotations can stand much longer. Several mills are nearly out of orders. Tank steel, 1·75 in small lots; shell, 1·90; flange, 2·10.

Structural Material.—The large concerns are full of work and brokers say that there will be very little idle capacity after the railroads get in their December and January orders for bridge work. Angles can be had at less than 1·65 and beams are quoted, delivered, at 1·70.

Steel Rails.—A good many railroad companies are ordering in a small way for repairing and it is understood that this policy will be continued all winter. Standard sections, $20.

Old Rails.—Prices keep up at $16.50@$17.25

Scrap.—More interest is shown for heavy steel and machinery cast. Prices are firm for occasional lots.

METAL MARKET.

NEW YORK, Friday Evening, Nov. 22, 1895.

Gold and Silver.

Prices of Silver per Ounce Troy.

Novemb'r.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.	Nov.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
16	4·89	30¾	67⅝	·521	20	4·89	30⅝	67	·518
18	4·89	30⅛	67¼	·520	21	4·89	30⅝	67	·518
19	4·89	30⅛	67⅛	·519	22	4·89	30¾	67¼	·520

Business with the East has been only moderately good. The depression that has prevailed in all the markets has acted upon bullion operations and has tended to lessen the demand. The Indian Council allotment on Wednesday was in line with these incations

The United States Assay Office at New York reports the total receipts of silver at 165,000 oz. for the week.

Gold and Silver Exports and Imports.

At all United States ports, October, 1895, and years 1895 and 1894 in coin and bullion:

	Gold.		Silver.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
Oct..	$1,873,897	$1,787,776	$4,594,447	$1,325,127	E. $3,355,441
1895..	75,064 179	30,627,715	43,259,057	9,305,791	E. 78,389,730
1894..	91,589,322	18,294,010	39.744,139	8,309 348	E.194,730.103

Imports and exports of gold and silver in ores for the ten months to October 31st are reported as below:

	Gold		Silver	
	1894.	1895.	1894.	1895.
Imports	$611,503	$1,513,314	$6,186,637	$10 256,897
Exports	25,559	340,463	200,101	199,825
Excess, Imports.	$615,944	$1,172,851	$5,986,536	$10,057,072

These imports and exports in ores are not included in the table of exports and imports of coin and bullion given above.

Adding the exports and imports in ores to those in coin and bullion, we have the following statement for the ten months of the present year to October 31st:

	Exports.	Imports.	Excess.
Gold	$75,404,642	$32,141,029	E. $43 263,613
Silver	43,458 882	19,562,688	E. 23,896,194
Total	$118,863,524	$51,703,717	E. $67,159,807

The statement includes all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending November 22d, 1895, and for years from January 1st, 1895, 1894, 1893 and 1892:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$2,915,803	$6,905	$658,991	$4,297	E. $3,563,594
1895..	62,964,460	27,513,233	34.659,893	1,501,092	E. 68,610,028
1894..	85,535,165	15,317,161	30,453,952	1,564,031	E. 99.107,925
1893.	70,311,114	62.050,329	28,916.131	3,118,490	E. 34.058.420
1892..	59.997.653	8 072 057	19 903,816	2.937 203	E. 68,892,209

Of the gold exported for the week $163,000 went to the West Indies, the balance to London; the silver went to London, except $3,700 to South America. The gold and silver imported came from the West Indies.

FINANCIAL NOTES OF THE WEEK.

General business continues to show a good condition, in spite of the somewhat depressed state of the speculative markets, which have been unfavorably affected by the uncertain state of affairs on the European exchanges, and to some extent also by the renewal of gold exports on a large scale. The two most reliable indicators of the volume of trade are the amount of bank clearings and the conditions of railroad traffic. Both of these, as we noted last week, continue to show a marked improvement as compared with last year, and both have reached a point where they will bear comparison with previous prosperous years. In addition to these indications, we find that demand for raw materials and manufactured products is well maintained in all directions, and that, with very few exceptions, prices are well supported.

Gold exports continue, shipments of $1,750,000 having been made on Wednesday, while $4,600,000 are reported taken for despatch by Saturday's steamers. The continued demand for sterling bills, and the absence of supply, have kept the exchange rate at a point which makes shipments of gold profitable. Exports of cotton are increasing somewhat, but those of grain continue very light, and it is not improbable that gold will continue to go out for several weeks to come. In this connection, we may once more call attention to the fact that our production of gold is now larger than it has been for a long time, and is probably quite sufficient to balance the amount exported.

The address of the Secretary of the Treasury at the dinner of the New York Chamber of Commerce this week has attracted much attention. In it Mr. Carlisle took strong ground in favor of a reform of the currency, and especially of the retirement of the legal tender notes and the ultimate withdrawal of the government from the business of banking and note issues. In such an address the Secretary could not, of course, outline any specific plan, but it is generally understood that a plan will be submitted when Congress meets next month.

The statement of the United States Treasury on Thursday, November 21st, shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

	Nov. 14.	Nov. 21.	Changes.
Gold	$91,654,170	$87,804 557	D. $3,849,613
Silver	13,834,639	13,742,287	D. 92,352
Legal tenders	53,778,292	56 627.010	I. 2,848,718
Treasury notes, etc.	25 345,490	24,286,790	D. 1,058,700
Total	$184,612,591	$182,46[illegible],614	I. $2,151,947

Government deposits with national banks on the same date amounted to $15,417,281, an increase of $1,451,762 during the week.

Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, $140 305,280. Against these are held in the Treasury 16,303,608 coined standard silver dollars, and silver bullion purchased at a cost of $124,001,762, making a total of $140,305,370.

The foreign merchandise trade of the United States is reported as follows by the Bureau of Statistics of the Treasury Department for the 10 months ending October 31st:

	1894.	1895.
Exports	$660 271,397	$641,944,706
Imports	563,610,028	676,064,455
Excess	E. $96,661,369	I. $34,119,749

The imports and exports of gold and silver will be found in the usual place at the head of this column.

The apparent balance of trade for the 10 months, as shown by these statements, is as follows:

Excess of exports, gold	$43,263,613
" " silver	23,896,194
Total	$67,159,807
Excess of imports, merchandise	34,119,749
Net excess, exports	$36,040,953

Exports and imports of gold and silver in ores, as well as in coin and bullion, are included in this statement.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending November 6th gives the following totals, comparisons being made with the corresponding weeks in 1894 and 1893:

	1893.	1894.	1895.
Loans and discounts	$491,732,800	$498 937,000	$492,933,500
Deposits	464 684,100	594,547,400	526,228,600
Circulation	14,076,600	11,170,000	14,164,300
Specie	99,994,300	94,421,100	65.767.900
Legal tenders	81,717,200	117,189,800	86,193,300
Total reserve	$181,641,500	$211,610,900	$151,961,200
Legal requirement	116,171,225	148,636,850	131,557,150
Surplus reserve	$65,470,475	$62,974,050	$20,404,050

Changes for the week this year were increases of $1,144,000 in surplus reserve and $1,348,600 in specie; decreases of $2,989,700 in loans, $631,400 in legal tenders, $1,707,200 in deposits and $199,000 in circulation.

For convenience of comparison, we have grouped together in the table below the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced

to dollars, and comparison is made with the holdings at the corresponding dates last year:

	Gold.	Silver.	Total.
Asso. Banks of New York	.. ..	.....	$65,767,900
1894	.....	.....	94,421,100
Bank of England	$207,700,215	.....	207,700,215
1894	175,090,560	.....	175,090,660
Bank of France	390,916,500	$246,413.500	637,330,000
1894	393,475,577	247,830,990	641,306,567
Imp. Bank of Germany	.....	.....	228,130,000
1891	....	.....	269,210,000
Austro-Hungarian Bank	113,630,000	64,390,000	178 020,000
1894	75,075,000	71,565,000	146 646,000
Netherlands Bank	20,825,000	33.882,000	54,707,000
1894	20,390,000	33,857,000	54,247,000
Belgian National Bank	.....	.....	20,579,000
1894	.....	....	27,594,000
Bank of Spain	40,022,000	54,151.000	94,173,000
1894	40,021,000	50,138,000	90,159,000
Bank of Italy	59,725,000	9,415,000	69,140,000
1894	.....	.....	.....
Imp. Bank of Russia	351,560,000	50,355,000	401,915,000
1894	.....	.....	.....

The return for the Associated Banks of New York is of date November 16th; all the others are of date November 21st, except the Bank of Italy, whose return is dated October 20th, and the Bank of Russia, October 16th-28th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports its gold only, not considering silver at all. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

The foreign merchandise trade of Great Britain, as given by the Board of Trade returns, was as follows for the 10 months ending October 31st:

	1894.	1895.
Imports	£340,279,975	£340,758,464
Exports	229,323.864	238,028,550
Excess imports	£110,956,111	£102,729 914

The imports show a very slight increase—only 0·1%—this year as compared with 1894 The exports showed an increase of 3·8% over last year.

Imports and exports of the precious metals in Great Britain are shown by the Board of Trade statement as below, for the 10 months ending October 31st:

	Gold.		Silver.	
	1894.	1895	1894.	1895.
Imports	£23,799,825	£29,283,480	£9,559,909	£8,795,524
Exports	9,804,911	18,444,838	10,671,215	8,588,899
Excess.	I. £13,994,914	I. £10,838,642	E. £1,114,306	I. £206,625

The large increase in gold exports considerably overbalanced that in imports, and the excess imported shows a loss of £3,156,272 from last year.

Shipments of silver from London to the East for the year to November 7th are reported by Messrs. Pixley & Abell's circular as below:

	1894.	1895.	Changes.
India	£4,253,815	£3,691,757	D. £1,159,058
China	2,452,947	1,580.610	D. 872,337
The Straits	1,149,616	683,353	D. 466,293
Total	£7,856,408	£5,358,720	D. £2,497,688

Receipts for the week were £8,000 from the West Indies and £90,000 from New York in bar silver and £12,000 from Vera Cruz in Mexican dollars; a total of £110,000. Shipments were £125,777 bar silver to Bombay, and £14 600 in Mexican dollars to Penang; a total of £140,377 for the week.

Indian exchange shows a slight reaction this week, although the 50 lakhs of Council bills offered in London were promptly taken. The price receded a fraction from last week's figure of 13⅞d. per rupee. For the seven months of the Indian fiscal year from April 1st to November 2d the total amount of Council bills sold in London was 193,491,702 rupees, realizing £10,782,025. For the corresponding period of last year the amount was 183,466,053 rupees, realizing £10,095,772. The average rate this year has been 13·37d. per rupee, against 13·21d. last year, showing a very slight improvement.

The Indian Government is preparing to undertake some important railroad and other public works, and it is understood that a considerable amount of money will have to be raised during the next few months. It is not yet decided whether all of this will be borrowed in London, or a part in India. The latter course is urged in various quarters, and it is believed that an additional rupee loan would be a success. In view of the work to be undertaken there is some speculation as to the course of the government on the coinage question. The accumulation of money in the Indian treasuries, which was made some time ago, has been reduced until the balances are nearly at the normal level. The execution of works such as proposed will require a considerable expenditure of money in India, and it must be remembered that such works in that country require a much larger proportion of actual money than in any European country, owing to the comparatively small use of banking facilities and of credit instruments—checks, drafts, etc.—made by the natives there. Any large expenditure for government works would probably require a greater amount of coin than is at present available. How the government will provide this and whether silver will be coined on its own account or not is a matter, as we have said, of some speculation. It may be taken as certain that there will be no renewal of free coinage of rupees.

A recent despatch states that the Russian Government has announced its intention of coining next year 100,000,000 rubles in gold, and 25,000,000 rubles in silver in addition to the ordinary coinage. If this report is true, it would indicate that the Government intends to follow up the steps already taken in the direction of resuming specie payments. The value of the gold ruble is about 75c.

Russia has an abundant supply of gold, but the production of silver is small, and any large coinage of silver would require at least some purchases abroad.

Domestic and Foreign Coins.

The following are the latest market quotations for the leading foreign coins:

	Bid.	Asked.
Mexican dollars	$0.51	$0.51½
Peruvian soles and Chilean pesos	.48	.50
Victoria sovereigns	4.87	4.90
Twenty francs	3.86	3.90
Twenty marks	4.75	4.80
Spanish 25 pesetas	4.78	4.83

Other Metals.

Copper.—No improvement in the market can as yet be reported, and very little business has been done. Buyers will only enter the market at ma-materially reduced prices, which they think are sure to set in in consequence of the decline of copper in Europe, while on the other hand producers mostly remain firm and refuse to part with their holdings at the large reductions asked. All manufacturers are very busy, and even if they have not booked many new orders, they have their hands full with the old orders on their books. For months past exports from this country to Europe have been exceedingly light, and in consequence thereof stocks on the other side show a large decrease, and supplies from here are now sorely needed abroad. No particular pressure to sell is noticeable here, and it may reasonably be assumed that before long an active business will take place. Rumors have been current that Lake copper is obtainable at 11c., but no actual business is reported. Some lots from second hands are certainly offered at this price. For electrolytic copper we have to quote nominally 10½@10¾, and for casting 10½@10¼. No transactions are reported in Arizona copper. All these prices show a shrinkage of 10% and more from the highest prices realized only a short time ago.

The foreign market again shows heavy declines, the lower level of prices being evidently due to a certain extent to the new liquidation which has adversely influenced the stock exchanges in the financial centers of Europe. G. M. B.'s opened last Monday at a decline of about 10s. from the close of the previous week at £43 15s, but the heaviest break came on the following day, when £42 12s. 6d. was recorded. After that came a slight reaction to £43, and then a further drop on the 20th to £42 7s. 6d., which was the low-water mark. Since then some good buying set in, and the market closes rather firm at £42 15s.@£42 17s. 6d. for spot and £43 2s. 6d.@£43 5s. for three months prompt. Not only were the speculative brands of copper pressed for sale, but it is reported that considerably lower prices were accepted for tough, best selected and electrolytic copper: Tough, £46 10s.@£47; best selected, £47 10s.@£48; electrolytic copper, £48@£48 10s. The statistics for the first fortnight in November show the heavy decrease of 3,500 tons, which brings the European stocks down to about the lowest figure ever known.

Exports from Chile for the 10 months ending October 31st, reduced to fine copper, were 18,872 long tons, against 17,768 tons for the corresponding period last year, 17,244 tons in 1893 and 18,450 tons in 1892.

Imports of Mexican copper into France for the nine months ending September 30th were 3,850 metric tons, against 6,299 tons for the corresponding period last year, and 2,530 tons in 1893.

Copper Exports.—The exports of copper from the port of New York during the week ending November 22d, as reported by the New York Metal Exchange, were as follows:

Copper:			
Hamburg—Amalfi	Ingots	100	tons.
" "	Cakes	10	"
" Dania	"	50	"
" "	Ingots	16	"
" Dresden	Bars	71	"
Trieste—Peconic	Pigs	150	"
" "	Plates	30	"
Antwerp—Kensington	Pigs	50	"
" "	Bars	10	"
Liverpool—Georgic	Pigs	200	"
Rotterdam—Veendam	Plates	108	"
" "	Ingots	15	"
Hamburg—Patria	"	35	"
" "	Plates	55	"
Havre—La Gascogne	Bars	84	"
" "	Pigs	50	"
Genoa—Fulda	Plates	25	"
Matte:			
Swansea—Chicago City		142	"

The exports of copper from the port of Baltimore for the week ending November 21st are reported by our special correspondent as follows:

Copper:		
Rotterdam—Ohio	707 Bars	112,966 lbs.

This is a total of 1,059 long tons of copper, and 142 tons of matte from New York, and of 50 tons of copper from Baltimore; making in all 1,109 tons of copper and 142 tons of matte exported for the week. Arrivals at New York noted for the week were 50 tons ingots from the United Kingdom, and 64 tons matte from Mexico.

Tin.—Values have given way. The consumptive demand is a little slow, but deliveries may after all be considered good. We have to quote for spot and November 14·35@14·45; December-March, 14·50@14·60.

The London market for this article has followed the general tendency now ruling in Europe, and prices sagged off from day to day, closing at the lowest at £63 17s. 6d.@£64 for spot and £64 5s.@£64 7s. 6d. for three months prompt.

The next public auction of Banka tin will be held at Amsterdam, Holland, November 28th. The sale will include 32,200 slabs of Banka, and 4,000 slabs of Singkep tin.

Lead.—There has been a decidedly better feeling. Not only have the lower prices recently established induced consumers to lay in stocks, but the surplus which was held by Western refiners has evidently been disposed of, and the offerings were rather small. Under the circumstances, prices advanced to 3·22½@3·25, closing at the latter figure.

The foreign market continues exceedingly strong, and developed a remarkable buying power. Spanish lead has again advanced, and is now quoted at £11 10s.@£11s. 12s. 6d., and English lead 2s. 6d. higher.

St Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is dull and trading exceedingly light. The latest sales basis is 2·97½, and at this figure more lead can be bought than sold. Buyers look upon the future as rather uncertain, and on this account take hold sparingly.

Spelter is again materially lower. The buying has been rather poor, and galvanizers have refrained more or less from giving out new orders. Sales are reported from St. Louis at 3·30, and we have now to quote 3·55@3 60, delivered at New York. These figures show a decline of nearly 1c. from the figures ruling as late as six weeks ago.

The foreign market remains dull, good ordinaries being quoted in London at £15 2s. 6d., and specials £15 5s.

Antimony is unaltered: Cookson's 7¾; U. S. Star 7½, and Hallett's 7c.

Aluminum.—The latest price list of the producers quotes No. 1 metal, over 98% pure, in rolling ingots, 55c., 52c. and 50c. per lb, the prices being respectively for small lots, for 100-lb. lots and for ton lots; No. 1 metal, in ingots for remelting, 53c., 50c. and 48c. per pound; No. 2, over 94% pure, in ingots for remelting, 50c., 48c. and 45c per lb. Castings are quoted 60c. per lb. up, according to pattern and size of order. Sheets, 56c.@$3.50 per lb, according to size and thickness. Angles, channels, beams, etc., in orders of not less than 1,000 lbs., $1 per lb. with a special discount for large orders.

In London, ingots, 98% pure, are quoted 18½@19d. per lb. for small lots; 17@18d. per lb. for large orders.

Bismuth.—Quotations vary from $1.30 to $1.75 per pound, New York, according to grade and size of order. The demand, which is chiefly for use in bearing metal alloys, is increasing.

Iridium.—The demand is very small, and only occasional sales are made. The price varies from $25 to $35 per ounce, according to order and quality.

Magnesium.—The maker's prices are as follows, at works in Germany: 27 mark per kilo.—equivalent to $2.94 per lb.—for ingots; 26 marks per kilo. for bars; 36 marks per kilo. for powder, and 38 marks for ribbon and wire. For orders of less than 10 kilos., 1 mark per kilo. must be added for ingots of bars, and 2 marks for wire, etc.

Monazite.—The following quotations have been furnished us by parties dealing extensively in the mineral: Monazite containing 1½ to 3% thorium oxide, 8c. per lb.; 2 to 3½, 10c.; 3 to 4½, 15c.; 5 to 7½, 25c.; 7 to 9½, 30c.; 9 to 11½, 35c. per lb.

Nickel.—Quotations are unchanged at 34@37c. per lb., with small sales. The London quotation is 13@15 d. per lb.

Phosphorus.—Quotations current are 50@52½c. per lb., New York or Philadelphia.

Platinum.—Prices are somewhat higher, owing to steady demand and limited supply, and quotations are $12.50@$13 per ounce, New York. The London quotation is firm at 47@48s. per ounce.

For chemical ware, best hammered metal, Messrs. Eimer & Amend, New York, furnish the following quotations, the prices given being respectively for orders of over 250 grams; for orders of over 100 grams and less than 250 grams, and for orders of less than 100 grams: Crucibles and dishes 46c., 47c. and 48c. per gram. Wire and foil are 43c., 44c. and 45c. per gram. The current retail price for crucibles is 60c. per gram.

Quicksilver.—No change in pricee is reported this week, and we continue to quote $40 per flask, New York. The London price is £7 7s. 6d. per flask, with £7 5s. quoted from second hands.

Sodium.—In England makers' price is equal to 90@96c. per lb., according to quantity. Occasional sales only are reported here, usually on private terms.

Tungsten.—The following quotations for this metal and its compounds are furnished us by the manufacturers: Tungsten metal (powder) 98% pure, 70c. per lb.; tungstic acid. 45c. per lb.; tungsten salt tungstate of soda), 33c. per lb. These quotations are for large lots. For ferro-tungsten the quotations for ton lots of the various grades are as follows: 60% metal 60c. per lb.; 50% alloy, 45c. per lb.; 37% alloy, 33c. per lb. There has been no recent change.

Imports and Exports of Metals.—Imports of metals into this port for the week ending November 14th, as reported by the New York Metal Exchange, were as follows: 25,001 boxes, 225 tons, tin and black plates, 10 tons antimony ore, 20 tons spiegeleisen, 402 tons ferro-manganese from the United Kingdom; 150 tons tin from Singapore; 50 tons tin from Penang; 1 ton spelter, 2,500 tons spiegeleisen from Antwerp; 455 tons spiegeleisen from Holland; 200 tons manganese ore from Yokohama, and 524 tons manganese ore from Kobe, Japan.

Exports of metals from this port for the week were: 8 tons old metal to London; 78 tons tin scrap to Amsterdam; 46 tons tin scrap to Rotterdam.

Arrivals at Baltimore for the week ending November 15th were: 2,400 tons iron ore from Cuba; 3,460 tons iron ore from Bona; 2,500 tons chrome ore from Smyrna; 3,600 tons manganese ore from Poti; 401 tons spiegeleisen, 100 tons pig iron, 210 tons ferro-manganese, 15 tons ferro silicon, and 4 377 boxes tin and black plates from the United Kingdom.

Arrivals at Philadelphia for the week were: 9,100 tons iron ore from Cuba; 2,550 tons copper ore from Spain; 40 tons tin from London.

Exports of metals (other than copper) from the port of Baltimore for the week ending November 21st are reported by our special correspondent as follows: 250 tons wash metal, 555,825 lbs., and 402 tons pig iron, 892 480 lbs., to Liverpool; 496 bdles. tin scrap, 74,640 lbs., and 41 bbls. sulphate of copper, 22,775 lbs., to Rotterdam.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, Nov. 22.

Heavy Chemicals.—There is little of interest to report of this market. Caustic has been quiet but steady and only a fair inquiry is reported as consumers seems to be pretty well supplied. In alkali and carbonated ash there has been a fair demand for current consumption at unchanged prices. Bleaching powder for 1896 delivery has been in request and several contracts have been placed. Sal soda has been quiet. Prices are without noteworthy change and we quote: Caustic soda, 2·15@2·25c. for spot, according to test; Carbonated soda ash, 48%, is ·95 @1c., according to quantities and deliveries. Alkali is ·85@1·05c., according to test and package. Bleaching powder, $1 85@$1.95. Sal soda, 65@70c.

Acids.—The volume of business for 1896 delivery done during the week has been quite fair. The jobbing demand has also been good and prices have ruled steady, though they are not higher. The outlook is good and all manufacturers report a belief that better prices will yet prevail. We quote per 100 lbs. in New York and vicinity, in lots of 50 carboys or over as follows: Acetic acids (in barrels), $1.40@$1.70. Muriatic acid, 18°, 75@80c.; 20°, 80c.@90c. Nitric acid, 36°, $3.50 @$4; 40°, $4 @$4.50; 42°, $4.75@$4.25. Oxalic acid, $7.10@$7.60. Mixed acids, according to mixture. Sulphuric acid, 66°, 75@85c.; chamber acid, $6.50@ $7.25 per ton at factory. Blue vitriol is in demand, with sales at $3.90@$4.10 according to size of order.

Brimstone.—We quote for shipments, best unmixed seconds, $15@$15.25. Thirds are 25@50c. less. Spot or nearby is $16.50 for seconds.

Fertilizing Chemicals.—A fair trade is reported in the fertilizer market. The demand, especially from the South, keeps up and prices are firmer. Quotations are as follows: Sulphate of ammonia, gas liquor, $2.50@$2.55; bone, $2.40@$2.50. Dried blood, high grade, $1.85@$1.95; low grade, $1.60@$1.70 per unit. Azotine, $1.80@$1.90. Concentrated phosphate 60% available phosphoric acid), 70@71½c. per unit. Acid phosphate, 13% to 15%, av. P_2O_5, 57c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, P_2O_5, 90@92c. per unit. Acidulated fish scrap, $12, and dried scrap with few or no sales, nominally $21 f. o. b. fish factory. Tankage, high grade, $19@$20; low grade, $18@$19. Bone tankage, $21; ground bone, $19@$20. Bone meal, $21 @$22.50.

In lots of 50 tons on contracts we quote, per 100 lbs.: Double manure salts, 48-53% (basis of 48%): New York, Boston and Montreal, $1.10; Philadelphia and Norfolk, $1.12½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.15. Sulphate of potash, 90%, and minimum, 96% respectively (basis of 90%): New York, Boston and Montreal, $2.08@ $2.10; Philadelphia and Norfolk, $2.10½, Charleston, Savannah, Wilmington, N. C., and New Orleans, $2.13.

Muriate of Potash.—Quotations for lots of 50 tons are as follows: 80·85% and minimum 95%, respectively (basis of 80%): New York, Boston and Montreal, $1.78; Philadelphia and Norfolk, $1.80½; Charleston Savannah, Wilmington, N. C., and New Orleans, $1.83.

Kainit.—Prices for kainit (minimum 23%) are as follows for invoice and actual weights respectively: New York, Boston and Philadelphia, $8.80; Norfolk, $9.15; Charleston, Savannah, Wilmington, N. C., and New Orleans, $9 55.

Nitrate of Soda.—We quote spot, $1.82½@$1.85; arrivals, $1.75@$1.80, according to position.

MINING STOCKS.

Complete quotations will be found on pages 506 and 507 of mining stocks listed and dealt in at:

New York.	Aspen, Colo.	St. Louis.
Boston.	Colorado Springs.	Paris, France.
Philadelphia.	Duluth, Minn.	Mexico.
Baltimore.	Helena, Mont.	Shanghai, China.
Pittsburg.	Salt Lake, Utah.	Valparaiso, Chile.
Denver, Colo.	San Francisco.	London, England.

NEW YORK, Friday Evening, Nov. 22.

The Consolidated Stock & Petroleum Exchange of this city is taking steps to induce the mining stock boom which is now so active in Colorado Springs to come here. President Charles G. Wilson appointed a special committee consisting of L. J. Werner, M. E de Aguero, S. F. Strong, H. E. Jenkins, and A. D. Moir to co-operate with the regular committee on mining securities in devising a plan. The two committees have conferred on the subject, and although no information has been given out, it is understood that some of the Cripple Creek stocks will be listed here and probably some of the useless stocks stricken off the present list of the Exchange. As we have pointed out previously, there are a number of companies now on the list which have lost their charters and have ceased to exist, so that "calling" them daily is practically a farce.

In the meantime the usual dullness prevails in the mining stock market here. Very little was done in the Comstocks. Consolidated California & Virginia shows sales of 350 shares at $2.25@$2.35. An equal number of shares of Ophir sold at $1@$1.05. Other sales were: 200 shares of Best & Belcher at 7c@75c.; 300 shares of Gould & Curry at 25@35c.; 200 shares of Hale & Norcross at $1.10@$1.40; 300 shares of Mexican at 40@48c.; 200 shares of Sierra Nevada at 70@80c.; 100 shares of Union Consolidated at 60c., and 300 shares of Yellow Jacket at 29c.

Of the California stocks Brunswick was traded in to the extent of 1,800 shares at 10@12c. There was a solitary sale of 100 shares of Bodie Consolidated at 38c. Of Quicksilver, common, 200 shares were sold at $2 50@$2.75. Standard Consolidated was stationary at $2.00 with sales of 500 shares.

The Colorado stocks apparently are the most popular. The following sales were made during the week: 1,200 shares of Iron Silver at 25c.; 200 shares of Lacrosse at 10c.; 1,800 shares of Leadville Consolidated at 12@13c.; 450 shares of Little Chief at 16@ 18c.; and 100 shares of Small Hopes at 95c.

Horn Silver was in demand, and 1,940 shares were sold at $2.05@$2.30. Of Ontario 100 shares were sold at $9.63.

There was a sale of 5 shares of Homestake at $25. Other sales were: 1,500 shares of Barcelona, at 4@5c.; and 400 shares of Phœnix of Arizona at 4c.

Boston. Nov. 21.

(From Our Special Correspondent.)

The improvement noted in our last letter in copper stocks was continued during the early part of this week, and Boston & Montana sold up from $71½ to $73¼, but the decline in ingot copper and the general demoralization of the stock market caused a decline in the whole list, and the meeting of stop orders sent Montana down to $67, with only a fractional recovery. The dealings in this stock have been very large, and the opinion is prevalent that lower prices are evident. It is thought, however, by some of the interested parties in copper stocks that now is a good time to buy the best stocks for investment, as the decline has not brought out many long holdings, which shows a good degree of confidence in this class of securities. The decline in Montana had its influence upon the balance of the market, all showing more or less decline from the prevailing prices of last week.

Butte & Boston went off from $17¼ to $15 on liberal sales, and recovered but a small fraction of the loss.

Calumet & Hecla sold at $310 for 5 shares early in the week, and declined to $300 on moderate sales. Quincy, which sold last week at $125, dropped to $118, with later sales at $120. The scrip sold from $71 to $69. Tamarack closed higher than last week with sales at $136. Franklin has been weak, and sold quite freely at $12, against $14 last week. Osceola on so all dealings declined from $27 to $25¾. Kearsarge advanced in early dealings to $17½, but lost the advance and sold down to $15, at which it closed. Atlantic lost $1 in the week's dealings and sold at $17. Tamarack, Jr. declined from $17 to $15¼, closing there. Wolverine, from $6¾, sold down to $6¼ on light transactions. Arnold sold at $1¼.

Lake Superior Iron sold at $30 for 50 shares.

The feature of the gold stocks was the advance in Gold Coin Mining Company on the report that a dividend would be paid about December 1st. The stock sold at $1.05, advanced to $1 30, and closed at $1.25. Sales of about 3,000 shares. Merced declined from $33 to $30 on small sales. Santa Ysabel advanced from $9 to $9½. Boston & Cripple Creek sold at 30c., declined to 20c. and closed at 25c.

Chicago. Nov. 20.

(From Our Special Correspondent.)

Chicago has just established a Mining Stock Exchange. It is situated in the New York Life Insurance Building. For the present only Cripple Creek stocks will be listed, and only those Cripple Creek properties that are known to be reliable will be dealt in. The following mines are now listed: Alamo, Anaconda, Anchoria-Leland, Agate, Arvilla Tunnel and Mining, Bankers, Cannon Ball, Creede & Cripple Creek, Cripple Creek Consolidated, Elkton, Enterprise, Garfield-Grouse, Gold & Globe, Golden Eagle, Gold King, Gold Standard, Gould, Henrietta, Isabella, Jack Pot, Ladessa, Moose, Mt. Rosa, Nugget, Pharmacist, Portland, Reno, Summit Mining and Milling, Specimen, Union Gold, Victor, Work, Zenobia.

Arrangements have been made with Cripple Creek parties whereby quotation are telegraphed, and a like arrangement has been made with Colorado Springs. The originators of this new exchange are Messrs. George P. Perkins & Company, and it is to be hoped that their enterprise will give to Chicago what it has long really needed, a mining stock exchange. It is possible that the Chicago Stock Exchange will soon list mining stocks, as there is a decided tendency toward a movement in that direction. That there is to be a great boom in mining in the near future, is certain, for at the present time money is beginning to pour into Cripple Creek and other gold camps of the West from Chicago. There is no better evidence of this fact than is shown by the assayers and mining engineers of Chicago, for they are now more busy than for years past.

[NOTE.—A press despatch of November 22d states that the Stock Exchange has voted down a resolution providing for the proposed listing.]

Colorado Springs, Colo. Nov. 18.

(From Our Special Correspondent.)

As I wrote last week, the mining stock "boom" seems to be fairly "on." The past week has seen a largely increased volume of business and as there seems to be no abatement to the demand and no end to the inquiries, prices have, with few exceptions, tended upward.

The most important mining stock center is, of course, Colorado Springs, which has two reputable and well-established exchanges, the Mining Stock Exchange and the Board of Trade, and also a promising "baby" in the person of the Consolidated. I have written so often of the former two and of the men who compose it that I have nothing to add now. I am told, though not officially, that the deal to consolidate them has fallen through, apparently owing to the fact that neither institution was willing to make concessions which the other deemed indispensable. At this writing the very active market which we are enjoying does not cause the desirability of consolidation to appear as urgent as would probably be the case were the market dull.

A mining stock exchange has been started in Pueblo, and I understand that another is to be established in Denver, making two at the capital. The Cripple Creek exchange reports a good business there. But in spite of these competitors the local exchanges continue to do the bulk of the business. Judicious advertising has brought them to the notice of the East, and the number of inquiries and orders received from Eastern investors is daily increasing. I should like to warn your readers against doing business with irresponsible parties. There are so many reputable brokers in this city that it would be a pity to see money lost by employing outsiders.

BY TELEGRAPH.

Messrs. Gardner & Co. wire us the closing quotations of the Colorado Springs Mining Stock Exchange for the week ending November 21st as follows:

Name of Company.	15	16	18	19	20	21
Anaconda	.61½	.62	.64	.62	.62	.62
Argentum-Juniata	.48	.46½	.49½	.44	.41	.42
Consondated	.17¼	.17¼	.18	.17½	.17¼	.18
Isabella	.33½	.33	.34	.36¾	.38	.38¾
Mollie Gibson	.42	.41	.41	.42	.41	.40
Pharmacist	.15	.17	.15	.03¾	.14¼	.13¾
Portland	2.00	2.05	2.05	2.05	2 05	2.05
Summit	.26	.26	.26	25½	.25	.25
Union	.23	.23	.21	2 ½	.24	.23
Work			.10	.10	10	.10¼

Salt Lake City, Utah. Nov. 16.

(Special Report of James A. Pollock.)

The mining stock market this week was of an irregular character. Transactions were quite large and prices at the close fairly steady in the major portion of the list, although there were very rapid fluctuations in some stocks which heretofore have held remarkably strong, in this instance acting very erratic. The material changes in these shares were due to reports of various nature coming out, but all were of such untrustworthy character that little reliance could be placed in any of them.

Nothing was done in Ajax. The property is said to be in good shape and shipments are being made as usual. Alliance was also inactive, holders not being willing to sell at prices made, and the stock maintained its phenomenal strength, even with an assessment on. Bullion-Beck was quiet. There were free offerings of the stock, with no deals closed. Another dividend has been passed by the company contrary to expectations, and now none is looked for before December.

Dalton held its own on the strength of the good reports received from the properties. There was considerable trading in the stock, the price ranging between 17 and 20c. Daly and Daly West were easy, with little business done in either. The Daly West mill should be in operation the first of the year. Lucky Bill is sending its shaft down at a good rate.

It has been a notable week for Mercur, and on Wednesday the stock took a terrible tumble on account of the passing of the dividend. On Thursday it recovered, however, and was held very firmly by outsiders and insiders alike. The passing of the dividend created a regular panic in the security, and offers were freely made on the street

of $5.50 early in the day, with no takers. Then the frightened ones took heart again, and the quotations went up to past the $6 mark, and at the close of the day was anywhere between $5.75 and $6.50. On Thursday came a decided change for the better, upon the announcement of the management that the De Lamar option was an assured fact. This announcement is in direct line with the information given through in my letters that De Lamar had secured the call on the majority of the stock at a price in the neighborhood of $7.50. This latter figure is the exact amount per share that will be paid for all stock transferred to him. An examination of the entire property of the company has just been completed, and the showing made was a surprise to even those on the inside. The average value of the ore blocked out is stated to be $12 per ton, and it is reported on very reliable authority that the measurements gave a tonnage of 240,000 tons. The insiders state they have reserved the right for any minority stockholder to get in on the option by listing stock with the secretary of the company for transfer to De Lamar. The terms of the contract give the latter until January 8th to make his payments. There is very little likelihood of any more dividends being received under the present management unless there should be some hitch in the deal.

Nothing was done in Ontario. Silver King is reported to be pressing developmental work and shipments of high grade ore are regular and heavy. The mill at the Sunshine is working along in a very creditable manner, and the company should soon make a shipment of product. No new stock has come on the market and the quotation holds firm above $3.50. Some sales have been made at $3.60. Utah paid a dividend of 1c. per share, or a total of $1,'00, November 8th.

San Francisco. Nov 16.

(From Our Special Correspondent.)

The market opened badly on Monday and the week was generally dull, with declining prices. Toward the close there was a slight rally, but not enough to redeem the week, though it gave some hope for next. The Confidence assessment, though generally expected, had an unfavorable effect.

We continue to hear of the boom in mining everywhere, and know that the industry in this State is prospering; but it is evident that our stock market will not feel the effects until there is some very radical change.

New assessments noted this week are: Chollar (Nevada), 25c; Confidence, 30c; Carson Creek Mining Company, 50c.; Standard Gold and Silver Mining Company, Butte County, California, 3c. per share.

Some closing quotations are: Consolidated California & Virginia, $2.40@$2.45; Hale & Norcross, $1.35@$1.40; Ophir, $1.15@$1.20; Confidence, 93@95c.; Sierra Nevada, 67@69c.; Best & Belcher, 65@66c.; Mexican, 43@45c.; Savage, 40@41c.; Yellow Jacket, 24@25c Bodie Consolidated is quoted at the close 36@37c.; Bulwer, 5@6c.; Mono, 11c.

The large dam being erected at Sweetland by the Milton Mining Company for the storing of debris will be one of the best in the State when completed. The base of the dam is 300 ft. in width and it will be 150 ft. high, with a correspondingly large capacity for holding debris. About 45 men are now employed on the work.

That dullness on the stock market does not extend to mining generally is shown by the fact that no less than 54 new gold-mining companies have been organized in this State thus far in 1895.

The annual meeting of the Challenge Consolidated Mining Company has been called for November 21st.

Mining assessments amounting to $50,750 will be delinquent in November, of which the Nevada mines call for $48,600.

Assessments of 25c. on the Ophir and 15c. on Gould & Curry were levied this week.

The Cinnabar King Quicksilver Mining Company, of Sonoma County, has levied an assessment of 1c. per share, delinquent December 28th.

London, Nov. 6.

(From Our Special Correspondent.)

In the absence of special disturbance at the settlement here and in Paris, the Kaffir market is comparatively quiet. Prices have settled down to a lower level for the present, and little new can be expected until the next settlement comes.

The West Australian market has been dull and drooping in sympathy with South Africans, and very little buying has been observable. The chief feature of the market has been the flutter in Great Boulders. For some time this mine has been considered as the most promising gold producer of the colony, but owing to the management of the mine and company being in the hands of a certain notorious group of professional manipulators, it has been impossible to get at the truth of the various rumors and statements regarding the production and circumstances of working. First comes the news that during September 265 tons of ore were crushed, yielding 1,455 oz.; then that operations are impeded by scarcity of water; then that there never has been any water difficulty at the mine and never will be; then that Herr Schmeisser, the Freiberg expert, is visiting the mine and will report shortly; then that he has certainly visited the mine but was never asked to report on it; then that he has sent in a report and that it is in the hands of the inside manipulators, who intend to make use of the information it contains before making it public. In face of all these statements and counter-statements, what are we to believe, and how are we to get at facts? Compare these goings on with the methods of announcing the output and profits in other new districts, such as Cripple Creek and Kootenay, and ask which lends itself to mining operations proper and which to stock exchange manipulations.

The only section of the mining market which has been prosperous lately is in the Indians. As I have mentioned before in some of my recent letters, this group of gold producers has received a good deal of attention by some of the shrewder men who have become disgusted with South African and West Australian inflations, but who have not sufficient courage to go into anything new. Mysores, Ooregums and Champion Reefs have all moved upward with this increased attention, while one or two of the smaller concerns have received fillips recently through the news of extra good strikes. I may mention here that the Indian group, under the management of John Taylor & Sons, publish the best periodical reports of mining progress that are to be found either in this country or the United States. The fortnightly reports show every detail of the work done, so that, starting with the reports and maps of the mines published half yearly, an investor can keep his knowledge of the mine right up to date, can calculate the amount of ore in hand and its contents, and can judge how each ore body is developing. Experience in these reports shows that the mining manager's estimates of the average contents of the ore sent to mill are correct, and are not based on special pickings.

The attempts of the Golden Gate of California, Limited, to acquire a new property have not been very successful. Some months ago the Lucky Bob mine was acquired, but has since been abandoned as prospecting work did not fulfill expectations. Since then the Rock River mines, about 10 miles from Oroville and near the original property of the company, have been acquired, and the plant is in course of removal. These mines were located originally about 1857, but were never worked below water level. So far only a year's bond has been acquired and nothing further will be paid until the debris is removed and the mines thoroughly prospected.

It will be remembered that a year or so ago the Panulcillo Copper Company, of Chile, was reconstructed under the name of the Central Chile Copper Company. The additional capital subscribed was devoted to remodeling the method of getting and treating the ore so as to conform to modern practice. Some three months ago I mentioned that the company's operations were now on a paying basis. It now appears that the reconstruction and remodeling was effected at much less cost than was anticipated, so that it is proposed to devote the remaining £25,000 of capital to erecting a plant which will enable managers to put the copper on the market in the form of bars instead of regulus, as at present.

Paris. Nov. 10.

(From Our Special Correspondent.)

The passing of the settlement in the mining market, with much less trouble than had been expected, was partly due to the support given to speculators by our bankers, and partly, as I have said heretofore, to the fact that our people have not generally been disposed to part with their investment holdings. It begins to be understood that the speculative interest is smaller than many have believed.

There has been another exceedingly unfavorable influence at work in the troubled situation in Turkey. The holdings of Turkish securities in France are large, and the critical condition of affairs in that country has affected the market perhaps more seriously than the mining stock crisis. In the gold stocks there is room for hope always, and after all the London bear tactics have not affected real values in the Transvaal; but in Turkey every change is for the worse, to say nothing of the rumors of war which accompany every attempt to settle affairs there. The estate is too valuable to permit a division without quarreling; for no one believes that the Turkish dominion will last much longer.

At the settlement just closed there were four failures reported; three of them were due entirely to the fall in Turks, while the fourth house had dealings in those securities as well as in mining shares.

These conditions have affected all the market more or less, and in general it can be reported dull, with a tendency to lower prices.

The copper stocks have been especially heavy. In addition to the general dullness there have been reports of dissension among the producers and of large increases in production to come. The Rio Tinto clique, in Berlin, has been especially active in circulating these and similar reports, and they have been aided by the fall in prices of the metal.

I may note here that there is a time-honored fallacy, generally believed in by brokers and professional speculators, that a collapse in speculative stocks increases the buying of high class or investment securities by the public. Why this belief is still prevalent when facts have so often shown the contrary, I do not know. The truth is that such a collapse discourages all buying, and all securities suffer.

Our new ministry has announced its intention to institute a series of reforms. We are curious to see what the full programme will be on a radical basis. They will begin with new plans of taxation, I believe.

AZOTE.

MEETINGS.

Marguerite Consolidated Mining Company, special meeting, at the office of Mr. John T. McCumbs, Colorado Springs, Colo., December 5th, at 2 p. m.

Running Lode Mining and Milling Company, stockholders' meeting, at the office, Room 62, Railroad Building, Denver, Colo, November 30th, at 10 a. m.

DIVIDENDS.

Highland Mining Company, dividend of 25c. per share, paid November 20th.

Homestake Mining Company, dividend No. 208, of 35c. per share ($3,1250), payable November 25th, at the office of the transfer agents, Messrs. Lounsbery & Co., Mills Building, New York City.

Victor Gold Mining Company, dividend of 10c. per share, paid November 15th.

ASSESSMENTS.

Name of Co.	Loc'n.	No.	Dlnq.	Sale.	Amt
Alpha, Con	Nev.	15	Nov. 5	Nov. 26	.10
Anna	S. D.	4	Dec. 10	Dec. 30	.005
Atlas	"	9	" 7	" 26	.001
Best & Belcher	Nev.	59	" 9	" 30	.25
Bogan	Utah	1	Nov. 18	" 9	.10
Bullion	Mont.		" 8	Nov. 25	.009
Bullion	Nev.	16	Dec. 9	Dec. 30	.10
Bulwer Con	Cal	11	" 4	" 31	.05
Bunker Hill	S. D.	7	Oct. 10	Nov. 30	.002
California	Cal.	9	Dec. 3	Dec. 21	.01
Carson C	Kas.		" 10		.50
Chollar	Nev.	41	" 17	Jan. 7	.25
Cinnabar King	Cal.		" 28		.01
Confidence	Nev.	26	" 18	Jan. 8	.30
Elk Queen	Mont.		Nov. 25	Dec. 5	.07½
Emmett	S. D.	10	Dec. 13	" 31	.02
Exchequer	Nev.	38	Nov. 25	" 19	.05
Gold Bar Con	Cal.		Dec. 21	Jan. 16	.03
Gould & Curry	"	77	" 10	Dec. 30	.05
Granite Hill	"	12	" 4	Jan. 8	.10
Iowa	Nev.	21	Nov. 26	Dec. 16	.05
Jackson	"	15	" 25	" 24	.25
Jamison	Cal.	7	Dec. 16	Jan. 6	.02
Lucky Bill	Utah	15	Nov. 9	Nov. 25	.01½
Marguerite	Cal.	1	Dec. 2	Dec. 5	.10
Nor. Banner Con	"	37	" 9	" 30	.03
Occidental, Con	"	20	Nov. 4	Nov. 25	.10
Old Flag	"	1	Dec. 10	" 26	.02½
Ophir	Nev.	67	" 9	Dec. 30	.25
South Eureka	Cal.	22	Nov. 4	" 2	.02
Standard G. & S.	"		Dec. 7		.03
Superior	"	1	" 9	Dec. 30	.05
Transit	S. D.	7	Nov. 16	" 3	.001
Yellow Jacket	Nev.	60	Dec. 17	Jan. 22	.25

DIVIDENDS PAID BY MINING COMPANIES, OCTOBER AND YEAR 1895.

NAME OF COMPANY.	Location.	Paid in October.	Paid in since Jan. 1.
Adams	Colo.	$6,000	$6,000
Ætna Con	Cal.	10,000	10,000
Am. Dev. & Mg. Co.	Mont.		24,340
Alaska-Mexican	Alaska	25,000	51,000
Alaska Treadwell	"	75,000	225,000
Amethyst	Colo.		36,000
Argentum-Juniata	"	39,000	156,000
Bald Butte	Mont.		12,500
Bangkok-Cora Bell	Colo.	3,000	51,000
Belden, F. E. Mica	N. H.	4,000	38,000
Boston & Montana	Mont.		300,000
Bullion-Beck & Champion	Utah	50,000	325,000
Calumet & Hecla	Mich.	560,000	1,560,000
Centennial-Eureka	Utah	60,000	330,000
Champion	Cal.	3,400	27,200
Con. Cal & Va	Nev.		162,000
Copper Queen Con	Ariz.		150,000
Coptis	Nev		1,000
De Lamar	Idaho	95,000	540,000
Elkhorn	Mont.		50,000
Forepaugh	Colo.		16,000
Gold & Globe	"		11,250
Golden Fleece	"	20,000	152,000
Hecla Con	Mont.		115,000
Homestake	So. Dak.	31,250	281,250
Hope of St. Louis	Mont.		10,000
Horn Silver	Utah		100,000
Iron Mountain	Mont.		90,000
Jackson	Cal.		2,000
Kennedy	"		184,000
Le Roi	B. C.	25,000	25,000
Mayflower Gravel	Cal.		48,000
Mercur	Utah	25,000	200,000
Mollie Gibson	Colo.		50,000
Montana, Ltd	Mont.	191,000	102,300
Mont. Ore Purchasing Co.	"		120,000
Moose	Colo.	6,000	60,000
Morning Star Drift	Cal.	9,600	153,600
Moulton	Mont.		30,000
Mt. Rosa	Colo.		5,000
Napa Con. (Quicksilver)	Cal.	20,000	90,000
Nugget	Colo.		5,000
Osceola Con	Mich.		100,000
Portland	Colo.	6,000	180,000
Quincy	Mich.		600,000
Silver King	Utah	37,500	187,500
Smuggler	Colo		350,000
St. Joseph (Lead)	Mo		37,500
Standard	Cal		20,000
Tamarack	Mich.		200,000
Tom Boy	Colo		40,000
Union	"		12,500
Utah	Utah	2,000	15,000
Victor	Colo.	20,000	200,000
Victor L. & M. Co.	"	3,000	9,000
War Eagle	B. C.		132,500
W. Y. O. D.	Cal.		24,000
Total		$999,550	$7,754,340

Readers of the "Engineering and Mining Journal" will confer a favor on the publishers if they will notify the "Journal" of any errors or omissions in the above table.

STOCK QUOTATIONS.

COLORADO SPRINGS COLO.*

Name of Company.‡	Par val	Nov. 12 H.	Nov. 12 L.	Nov. 13. H.	Nov. 13. L.	Nov. 14. H.	Nov. 14. L.	Nov. 15. H.	Nov. 15. L.	Nov. 16. H.	Nov. 16. L.	Nov. 18.† H.	Nov. 18.† L.	Sales.
Alamo	$1	.06⅜	.06¾	.06		.06¾	.06	.06¼	.06	.06¼	.06¼			11,500
Anaconda	5			63		.61	.60	.61½	.61	.62	.59			900
Argentum J	2	.49	.48	.49	.48¾	.50	.48	.49	.47	.46½	.46¾			11,050
Bob Lee	1			.02		.02¼	.02½	.02½	.02	.02½	.02			37,000
C. O. D	1							.03		.03				
Cr. & C. C	1	.06	.05	.06⅞	.06	.06½	.06	.06	.05¾	.05¾	.05			6,750
Cripple C.C.	1	.16⅜	.16¼	.17¼	.17	.17⅜	.16¾	.17½	.17	.17¾	.17			17,500
Cr.Creek Ex	1	.15¾		.17		.17⅜	.16½	.17½	.16½	.16¾				17,000
Croesus				.01⅜	.01¼	.01¾	.01	.01½	.01¼	.01⅜	.01			76,600
Fanny B	1	.14⅜		.14½		.15½	.15⅜	.14⅜	.14⅜	.14⅝	.14⅜			4,367
Favorite	1	.14		.3	.12½	.12	.11	.12½	.11	.12⅜	.11½			38,875
Franklin	1	.01⅜				.02	.01⅞	.02⅜	.01⅜	.02	.01⅜			4,00
Gold & Gl.	1					.21	.19½	.20⅜	.20	.21⅜	.20⅜			500
Good Hope	1	.02		.02		.03	.02	.03	.01⅞	.02				6,500
Ida May	1			.15		.15½	.14⅝	.15⅜	.14½	.15⅜	.14½			2,000
Isabella	1	.33	.32½	.32½	.31⅞	.32⅜	.31¾	.33⅛	.33	.33	.32½			29,235
" stamp						.32	.30¾	.32	.21¾	.31				
Mollie G	5	.42	.41	.41		.46	.40	.47	.41	.41	.40			1,270
Mt. Rosa	1	.14⅜	.14	.14	.13½	.14	.13⅝	.14	.13¾	.14⅝	.13¾			9,750
Matao				.14½	.12½	.20	.16	.20	.16½	.21	.15			7,000
Pharmacist	1			.13¾	.13⅜	.13⅞	.13⅜	.15	.14⅜	.17	.16⅞			41,000
Portland	1	2.03	2.02¾	2.04½	2.04	2.03	2 00	2.05	2.00	2.05	2.02½			3,700
Rebecca	1													
Rubicon	1					.25¼	.24½	.25½	.24½	.26½	.25			1,000
Specimen	1	.14¾	.14⅜	.14⅜		.15½	.14½	.14⅜	.14½	.15	.14			9 000
Summit	1	.26¼	.24½	.27	.24½	.26	.21	.26	.25	.25½	.24			1, 00
Union	1			.25½	.25	.25	.23	.25	.22½	.25	.20			7,000
Work	1	.08½	.07⅞	.08¾	.08	.09¼	.08	.09¼	.09	.10	.03½			65,000

* Official quotations Colorado Springs Mining Stock Association † All the companies are located in Colorado. ‡Quotations not received. Total sales: listed, 433,547.

COLORADO SPRINGS, COLO.*

Name of Company.‡	Par val	Nov. 12. B.	Nov. 12. A.	Nov 13. B.	Nov 13. A.	N v. 14. B.	N v. 14. A.	Nov. 15. B.	Nov. 15. A.	Nov. 16. B.	Nov. 16. A.	Nov. 18. B.	Nov. 18. A.	Sale s
Anaconda	$5	65	.69		.63	.62½	.68	.60	.63	60⅝	.61	.60		2,381
Anchoria-L	1	.17	2.00		2.00	1.65½	1.75	1.65	2.00	1.61	2.00	1..0		
Aola	1	.03¼	.03⅜	.03⅜	.03¼	.01	.03⅛	.03		.02⅜	.3	.03⅜	.04	69,500
Arg'ntumJ	2	.48	.49	.45	.47	.43¾	.45	.47	.49	.45	.48	.46	.47	200
Bankers	1	.16¾		.19⅜	.20	.18⅜	.21⅜		.19⅞	.19¼	.20⅝	.21⅛	.22⅝	60,900
Ben Hur	1	.07¾	.08	.07¾	.07¾	.07¼	.07⅞	.07¾	.8	.07¾	.08	.07¾	.08	27,110
Blue Beti	1	.08		.08¼	.08½	.08¼	.9	.05½	.08¾	.08¾	.08¾	.03⅜	.08⅞	5, 0
Bob Lee	1	.01⅞	.02	.01⅞	.02	.02	.02¼	.01⅞	.02½	.02	.04⅝	.03¼	.02¼	110,200
Bucktnorn	1	.04⅜	.04¾	.04½	.4¾	.4¾	.5	.04½	.04⅝			.4½	.04¾	2,500
Calumet	1													
h'mpaig'e	1	.007	.01½	.08¾	.009½	.009¼	.009¾	.0 8¾	.0 9		.009	.008¼	.009	198 00
C. K. & N	1	.01¾	.01¾	.01¾	.0 ¾	.01⅞	.01⅝	.02	.02¼	.02	.02¼	.02	.02¼	.5 ,5 0
Colo.C.& M.	1		.06	.05¾	.05¾		.05⅜	.4 4⅝	.4 4⅝	.05¼	.05¼	.5 5¼	.5 5⅝	34,000
Columbine	1	.03⅝	.03⅝	.03		.03⅜	.03⅝	.03⅝	.03⅜	.03⅜	.03⅝	.03¾		,250
Copper M	1	.02½	.03	.02¾	.02⅝	.02¾	.02⅝	.02⅜	.02⅝	.02½	.02⅝	.02¾	.03¾	5,334
C. C. Con.	1	.16	.16¼	.16⅝	.16⅜	.16¾	.17¼	.3 3⅜	17	.16⅝	.16⅜	.17⅜	.17¾	27,250
Cr. & C. C.	1	.06	.06½	.06⅝	.07	.06¾	.06½	.05½	.5 5⅜	.05½	.06¼	.06¾	.06¾	63,3 0
Defender	1			.012	.012½	.9	.011	.01	.011⅜	.0105	.0113⅛	.013⅝	.013⅜	38 ,5 0
Des Moines	1	.05	.05¾	.05¾	.15¼	.0 ¾	.05½	.05⅜	.06	.05¼	.5 5⅜	.05		25,0 0
Enterprise	1	.14⅜	.15⅜	.14⅜	.15	.14⅜	.15	.14⅜	.14⅜	.14⅜	.15			2,000
Eureka	1	.14⅞	.0 ¾	.01⅜	.01¾		.1 ⅛	.014	.01⅜	.014	.0145⅛		.01¾	80,0
Fanny B	1													
Fanny R	1	.15	.15¼	.15⅜	.15¾	.15⅜	.15⅜	.14⅜	.15¼	.14	.15	.14½	.15¼	12,349
Favorite	1	.11	.13	.12	.14	.11			.12⅜	.13				
Franklin	1	.01⅜	.02	.01⅞	.02	.01⅜		.01⅜	.02	.01⅞	.02			165
Free Coin	1													
Garfield-Gr	1	.05⅜	.05¼			.04¾	.05⅛	.04	.05½	.05¼	.05¾	.04¾	.05	7,000
Gold & Gl	1	.19¼	.19½	.19½		.19½	.20	.20		.2 2½		.22¾	.25	6,000
Gold Eagle	1	.1 ⅛	.02	.01⅜	.02	.01⅜	.02				.02	.02⅝	.02¼	22,0 0
Gold. Age	1	.03⅛	.04	.03¾	.03⅞	.4	.04½	.04¾	.04⅞	.4 4½	.04⅝	.04½	.05	142,000
Gold King	1	68	.6	.6	.7	.65	.70	.60	.5			.65	.70½	
Gold Res	1													
Gold Stand	1	.11	.11⅛	.10½		.11¼	.11⅜	.12	.13	.12⅜	.13	.13¼	.13⅜	19,0 0
Golostone	1	.01⅜	.1 ⅛	.02⅜	.02¼	.01¾	.1 ⅛	.01⅞	.02	.2	.2	.02¼	.2 ¼	48 ,500
Gould	1	.11	.11¼	.1	.11½	.11⅜	.1 ⅜	.11⅝				.12¾	.12⅝	16,600
Gran. Hill	1			.02	.02¼	.02	.02⅜	.01⅞	.02	.1 ⅜	.02⅝	.01⅜	.02½	
Henrietta	1	.0 6½		.0 8¾	.01	.0 9	.009½	.009	.01	.0 ½		.012	.014	145,0 0
Isabella	1	.33	.33¼	.33		.2 ¼	.3 2⅝	.32	.32⅜	.32⅝	.33	.34¾	.34⅞	47,000
Jack Pot	1	.08½	.08¾	.08¼	.0 8¾	.08¼	.08¾	.01⅝	.08¼	.08¼	.05½	.08¾	.08½	35,300
Jefferson	1	.11	.13	.12½	.12½	.11¼	.12 8	.11¼	.1 ¼	.11⅝	.12	.11⅞	.12¼	1,000
Keystone	1	.0 ½	.06¼	.15½	.05¾	.0 ½	.06	.05	.0 ¾	.06	.06¼	.06¼		24,500
Ladessa	1	.02	.02⅝	.02½	.02¼	.02⅝	.02¾	.02⅝	.02¼	.02	.02⅝	.02	.02½	98, 00
Maggie R	1	.01½		.03⅜	.0 ¾	.00 ¾	.03			.01	.01½	.009½	.01	64,500
Magna Ch	1		.03⅜	.03½	.03¼	.03	.03⅜	.3	.03¼	.3	.03⅜	.03	.03¼	9,000
Matt Fr'ce	1													
Mollie G	1	.41½	.44	.42	.43	.39	.42		.42	.3 1	.40½	.39	.41	2 0
Mt. Rosa	1	.13¾	.1 ⅝	.13¾	.15		.14⅝	.12⅝	.14½	.14	.14	.14		
Mutual	5		.04	.07½	.07½	.07	.07⅝		.07½	.06⅞	.07¼			
Nugget	1	.12¼	.13¼	.13⅝	.13¾	.14⅜	.14¾		.15¼	.14⅝	.15	.14¾	.14⅞	33,500
Ophir	1	.05⅜	.06⅜	.05⅝	.4	.06⅜	.0	.06¾	.07	.06¾	.07	.07¼	.04⅜	8,000
OrphanBell	1	.09¾	.09¾	.09¾	.10	.09¾	.09⅝	.09¾	.10	.09¾		.10⅝		22,8 3
Ore Grande	1													
Pappoose	1	.03	.03¼	.03¼		.03⅛	.03⅜		.03⅜	.03¼	.03⅜	.03¼	.3 3⅜	24,000
Pharmacist	1	.13⅜	.13¾	.13¾	.13½	.13¾	.14	.14½	.15⅜	.15⅜	.15⅝	.15⅜	.17	62,000
Portland	1	2 00	2.02	2. 2½	2.03½	2 .2	2.04	2.07	2.04	2.00		2.0	2.04	4,4 0
Princess E	1	.08¾		.011½	.012	.00 ½	.01	.01	.01½	.01		.01½	.011	137,000
Prop sitl'n	1	.0 4½	.05	.006	.00 ½	.00 ½	.00 ½	.0 6½	.007	.05	.00694	.006	.006½	230,000
Reno	1	.04⅜	.04¾	.05	.5 5⅜	.04⅝	.05¼	.0 ¾	.05¼	.05	.4 5⅝	.04⅞	.05⅜	36,500
Sacram'nto	1	.5 5⅜	.05¼	.05¼	.05¾	.05¼	.05¾	.05⅝	.05⅜	.05⅜	.05⅜	.0 5½	.05¾	31,000
Santa Fe	1	.009	.009½	.009¼	.009¾	.011	.011⅛				.01⅝	.01⅜	.01⅝	49,000
Sliv. State	1	.02½	.02¾	.02½	.02¾	.02⅝	.02¾	.02	.02¼	.02	.02⅜	.02⅜	.02¾	79, 00
Star of W	1	.04	.02⅜	.02⅜	.02⅜	.02¼	.03⅜	.02⅝	.2 3⅜	.02	.02⅜	.02½	.02¾	7,000
Summit	1		.26		.25½	.2				.24	.25½	.24	.25¾	1,000
Temonj	1	.13	.13⅝	.12⅜	.13¼	.12½	.13	.11¾	.11¾	.11	.11⅜	.11¾	.12¼	4,000
T. F. T	1	.03¼	.03⅜	.03⅜	.03½	.03	.04	.03⅜	.03⅜		.04	.04⅜	.26,5 0	
Union	1			.25⅜	.25¾	.23⅝	.25		.24½	.23¾	.24¾	.23	.26	6,000
UnionLeas.	1									.30	.36	.33⅝		
Virginia M.	1	.03⅜	.03¾	.03¼	.03⅝	.03¼	.03⅜	.03¼	.03⅛	.03¼	.03⅜	.03¼	.03⅜	36,500
Wh. of For.	1	.003⅛	.007	.007½	.007¾	.0 8	.008¼		.009½	.009¾	.1	.0 9¼	.0	241,000
Work	1	.08⅝		.0 ⅜		.05¼			.09¼	.09⅝	.09½	.09¾	.10	17,135
World	1													

*Official quotations Colo. Spr'gs B'rd of Trade & Mg. Exch. Total shares sold: Listed, 130,767; miscellaneous, 2,263,987; cash value, $226,688.50. Sales for the week at the New Consolidated Exchange aggregated 4,252,075 shares.

SAN FRANCISCO, CAL.*

Name of Company.	Location.	Par. value.	Nov.16.	Nov.18.	Nov.19.	Nov.20.	Nov.21.	Nov.22.
Alta	Nev.	100	.12	.12	.10	.10	.09	
Belcher	"	100		.30	.27	.27	25	
Best & Belcher	"	100	.65	.60	.57	.56	.56	.58
Bodie Consolidated	Cal.	100	.37	.34	.34	.33	.34	.34
Bulwer	"	100		.05	.05	.05	.06	.05
Choliar	Nev.	100	.25	.25	.23	.22	.21	.22
Con. California & Virginia	"	100	2.40	2.30	2.15	2.10	2.05	2.10
Crown Point	"	100	.25	.26	.25	.24	.26	
Gould & Curry	"	100	.30	.27	.2	.22	.24	.25
Hale & Norcross	"	100	1.35	1.30	1.30	1.25	1.15	1.25
Mexican	"	100	.44	.38	.37	.37	.37	.39
Mono	Cal.	100	.12	.10	.10	.10	.10	
Ophir	Nev.	100	1.15	1.05	1.05	1.0	1.05	1.10
Potosi	"	100	.53	.52	.45	.47	.44	
Savage	"	100	.4	.34	.32	.32	.32	.35
Sierra Nevada	"	100	.71	.34	.60	.58	.57	.58
Union Consolidated	"	100	.56	.50	.48	.47	.45	.46
Utah	"	100	.5	.5	.5	.05	.05	
Yellow Jacket	"	100	.24	.24	.24	.22	.21	.21

* Official quotations San Francisco Stock Exchange.

BALTIMORE, MD.* Week ending Nov. 21.

Name of Company.	Location.	Par value.	Bid.	Ask.	Name of Company.	Location.	Par value	Bid.	Ask.
Balt. Mg & Sm.Co	N. C...	5	...	....	Howard C'l & Coke	Md....	5	....	...
Conrad Hill	"	10	...	.....	Lake Chrome	"	5	....	.....
Con. Coal	Md.	100	33	36	Ore Knob	"	10	....	.....
George's Cr'k Coal	"	100	108	112	Silver Valley	N. C...	5	.....	20

* Official quotations Baltimore Stock Exchange.

NEW YORK.*

Name of Company.	Location.	Par val.	Nov. 16. H.	Nov. 16. L.	Nov. 18. H.	Nov. 18. L.	Nov. 19. H.	Nov. 19. L.	Nov. 20. H.	Nov. 20. L.	Nov. 21. H.	Nov. 21. L.	Nov. 22. H.	Nov. 22. L.	Sales
Adams	Colo..	10													
Alice	Mont.	25													900
Argentum Jun.	Colo..	5													
American Flag	"	1													
Barcelona	Nev..	5									.04		.05		1,500
Bodie	Cal.	100			38										100
Belcher	Nev..	100													
Best & Belcher	"	100	.75		.70										200
Brunswick	Cal..	2				.10					12	.11			1,800
Butte & Boston	Mont.	25													
Choliar	Nev..	100													
Chrysolite	Colo..	50													
Comstock T.	Nev..	100													
do. bonds	"	100	.10												2,000
Con. Imperial	"	100													
Con. Cal. & Va	"	100					2 35		2.35	2.25					350
Crown Point	"	100													
El Cristo	R. of C	2													
Enterprise	Colo..	5													
Gould & Curry	Nev..	100			35								.25		300
Hale & Norcross	"	100			1.40								1.30	1.10	400
Homestake	S. Dak	100											25.00		5
Horn Silver	Utah..	25			2.05				2.30	2.15	2.25				1 940
Iron Silver	Colo..	20									.25				200
Isabella	"	1													
K. & Pembroke	Ont..	10													
Lacrosse	Colo..	0									.10				200
Leadville Con	"	1			.18	.12							.13		1,800
Little Chief	"	5	.18		.16		.12								450
Mexican	Nev..	10			.48						.40				300
Mollie Gibson	Colo..	5													
Moulton	Mont.	5													
Ontario	Utah..	100							9.63						150
Ophir	Nev..	100									1.00		1.05		350
Phœnix Con	Ariz	1							.54						400
Plymouth	Cal..	50													
Potosi	Nev..	100													
Q'cksilver, com.	Cal..	100			2.75	2.50									200
" pref.	"	100													
Savage	Nev..	100													
Sierra Nevada	Nev..	100	.80		.70										200
Small Hopes	Colo..	25									.95				100
Standard Con	Cal..	100	2.00				2.00								500
Union Con	Nev..	100	.60												100
Victor	Colo..	5													
Yellow Jacket	Nev..	100					2.0								300

*Official quotations N. Y. Stock and Con. Stock & Petroleum exchanges. Total sales, 13,795.

BOSTON, MASS.*

Name of Company.	Location.	Par val.	Nov. 15. H.	Nov. 15. L.	Nov. 16. H.	Nov. 16. L.	Nov. 18. H.	Nov. 18. L.	Nov. 19. H.	Nov. 19. L.	Nov. 20. H.	Nov. 20. L.	Nov. 21. H.	Nov. 21. L.	Sales.
Allouez	Mich.	25													
Arnold	"	25	1.20						1.25						250
Atlantic	"	25	17.50				17.50	17.00							4.0
Bonanza	"	10													
Bost. & C. C	Colo.	1									.35	.20	.25		2,200
Bost. & Mont.	Mont.	25	73.00	71.0	73.25	72.50	72.75	71.50	70.25	68.50	68.87	67.00	69.50	67.50	27,519
Butte & Bost	"	25	17.50	16 50	17.50	17.13	17.00	16 0	16 00	15.25	15.50	15.00	15.50	15.13	4,856
Cal. & Hecla	Mich.	25	310		305		305		303				3.0		165
Catalpa (Silver)	Colo.	10													
Centennial	Mich.	25													
Dominion Coal	N. S.	100													
do. pref.	"	100							93.25	93 0	93.25				169
Franklin	Mich.	25			13 50	13.00	13.00		12.00		12.50	12.00	12.00		867
Illinoi Steel	Ill.	100							79.00	78.00	76.50				210
Gold Coin	Colo..	1	1.0		1 .5	1 15	1.3	1.28	1.30	1 28	1.30	1.25			3,000
Kearsarge	Mich.	25	17.50	16.50	17.25	17.00	17.00		16.00	15.00			15.00		1,000
Lake Sup. Iron	"	25	30.00												50
Merced	Cal.	15	32.00	31.50	31.00				30.00	28.00	30.00				300
Minnesota (Ir.)	Minn.	100													
Napa	Cal.	4													
National	Mich.	25													
Osceola	"	25					27.0		26.25				25.75		94
Pontiac	"	25													
Quincy	"	25	124		124				121	120	120	118	120		276
do. scrip	"						71.0	70.00	69.00						300
Santa Rosa	Cal..	10													
San. Ysabel G.	Cal.	5							9.00		9.50				250
Tamarack	Mich	25	145		135						137	136			102
do. Jr.	"	25	16.50				17.00		15.5		15.50	15.25	15.00		296
	"														
Tecumseh	"	25													
Westingh E.&M	Pa.	50	35.00	34 .63	34.75			34.88	34.50	34.50					725
do. pref.	"	50			54.75	54.50	54.75	54 50					54.50		300
Wolverine	Mich.	25					6.88	6 50	6.50	6.38	6.50		6.25		800

* Official quotations Boston Stock Exchange. Total sales, 47,019.

INDUSTRIAL COAL AND COAL RAILROAD STOCKS.*

Name of Company.	Par value.	Nov. 16. H.	Nov. 16. L.	Nov. 18. H.	Nov. 18. L.	Nov. 19. H.	Nov. 19. L.	Nov. 20. H.	Nov. 20. L.	Nov. 21. H.	Nov. 21. L.	Nov. 22. H.	Nov. 22. L.	Sales
Balt. & Ohio	100	57		57½	57	58	57⅞	57½	57	57¼		56¼		2 145
Ches. & Ohio	100	19		19	18⅞	18¾		18¾	18	18¾		18¾		5,180
Col.C. & I Dev	100													
Col. Fuel & I.	100	33¾	33	32½		31		31½		31½	31	30½		1,000
Col.,H.V.&Tol	100			20	19¾	20		19⅝						10
do. pref	100	60		58										200
Col. & H.Coal	100													
Del. & Hud. C	100			129½	129	129	128¾	129¼	128½	129¾		128⅞		2,082
Del., L. & W.	50			167⅛	167½	168¾								440
General Elec.	100	31½		32¼	31½	31½	30⅝	31½	30⅝	30¾	30½	30½	30¼	5,535
Illinois Steel	100					77⅜				77		77		265
Lake Erie&W	100			23¾						22		22		100
do. pref	100	74¼		74				73⅝		73¾				800
Nat'l Lead	100	32	31⅜	32		31	30¾	30¾	30⅝	3 ¾		30½		1,233
do. pref	100	92½	92	92¼	92½	90¾	9 ½	91¾	91	92	9 0⅝			816
N. J. Central	100	108		109		107⅜						107¼	107	1,289
N. Y. L.E.&W	100	1 ⅜	1⅜	10½	9⅝	9¾	9⅜	9¼	9¼	9⅞				1,012
N.Y.,Ont.&W.	100	15⅜		16	15¾	15¼	15	15⅛	14⅝	15¼	15	15	14⅞	8, 72
N.Y.,Susq.&W	100			1 ⅜		11		11⅜	11			10⅝		1,650
do. pref.	100			33	32½	31¾								400
Norfolk & W.	50	3		3										725
do. pref	50					11½		10	9¾					515
Phila. & Read.	50	11	9½	1 ¾	9¼	10⅝	9⅜	10¼	9⅞	10⅛	9¾	10	9½	70,110
Tenn. C & I	100	33¼	32¾	33½	32½	32½	31	33⅜	32	32⅜	32¼	32¼	31	32,530
do. pref.	100													
Wells Fargo	100													
Wheel. & L. E	100	13¾	13½	14¼	13¾	14	13⅝	14⅛	13⅞	14	13¾	13⅞		3,460
do. pref	100													

* Official quotations N. Y. Stock Exchange. Total shares sold, 144,198.

PITTSBURG, PA.* Week ending Nov. 21.

Name of Company.	Location.	Par value.	Bid.	Ask.	Selling price.
COAL:					
Mansfield C.&C	Pa.	50	34½	.....	.....
N.Y.&C.GasCo	"	50	36	40	.....
MINING:					
Enterprise	Colo.	5	.....	.....	.....
Lustre	Mex.	10	14⅜	15	14½
Silverton	Colo.	10	.....	.....	.....
MISCELLANEOUS					
Carborum. Mfg	Pa.	100	.....	.....	.....
NATURAL GAS:					
Allegheny	Pa.	100	..	...	.....
Chartiers Val	"	100	7	7½	.....
Manufacturers	"	100	41	43	.....
People's N.Gas	"	50	30	....	.....
People's Pip'ge	"	25	13	....	.....
Pennsylvania	"	50	....	4	.....
Philadelphia	"	50	16½	16⅝	16⅝
Wheeling	W. V.	5	17	17⅛	17¼

* Official quotations Pittsburg Stock Exchange.

ST. LOUIS, MO., STOCKS. Week ending Nov. 19.

Name of Company.	Location of Works.	Company's Office.	Par value.	Bid.	Asked.	Last Dividend.
Central Lead Co	Flat River, Mo...	St. Louis, Mo	$100	$50	$60	.....
Con. Coal Co	" " ...	" "	100	20	21	June, '95, 1 p. c.
Doe Run Lead Co.	Doe Run, Mo.....	" "	100	70	80	June, '92, 2
Kan. & Tex. Coal	" " ...	" "	100	64	66	.....
St. Joseph Lead Co	Bonne Terre, Mo.	New York.....	10	8⅛	9⅛	July, '95 1½ p. c

DENVER, COLO.* Week ending Nov. 16.

Name of Company.	Location.	Par value.	Opening	Highest.	Lowest.	Closing. Bid.	Closing. Ask.	Sales.
Addie C	Cripple Creek, Colo.	$1	.009¼	.011	.010¾	.01	.01⅛	2'6,000
Agate	" " "	1	.008½	.01⅛	.008¼	.01⅛	.01⅜	689,000
Alamo	" " "	1	.06	.07	.06	.05¾	.06¼	3,000
Amity	" " "	1	.03½	.07	.02½	.02	.04	6,160
Anaconda	" " "	5	.66	.73½	.63	.59	.61½	33,000
Aola	" " "	1	.03½	.03½	.03¼	.03	.03⅛	123,700
Argentum-Juniata	Aspen, "	1	.48	.51	.45	.45	.47	21,200
Bangkok	Leadville, "	1	.11	.11	.09¼	.09¼	.10	3,300
Bankers	Cripple Creek, "	1	.16¾	.20	.17	.18	.20	45,400
Big Six	" " "	1	.06¾	.07½	.06¾	.06¾	.07¼	600
Bob Lee	" " "	1	.....	.02¼	.02¼	.02¼	.02¼	149,0 0
Boston-Idaho	Leadville, "	1	.28½	.29	.22	.24	.25	1,500
Cannon Ball	Cripple Creek, "	1	.01	.01⅜	.01⅛	.01	.01¾	45,000
C. K. & N	" " "	1	.012	.018¾	.015¼	.02	.02¼	1,289,0 0
Colo. City & Manitou	Leadville, "	1	.03¼	.03½	.05	.05¾	.05¾	12,0 0
Creede & Cripple Creek	Cripple Creek, "	1	.06	.07	.05¾	0 3¾	.06	84,000
Cripple Creek Con	" " "	1	.1 3⅛	.17	.16	.6¼	.....	6,0.0
Eclipse	" " "	1	.014	.0172	.0145	.01⅝	.01⅞	364,000
Eureka	" " "	1	.01	.01¾	.01⅛	.....	.....	218,000
Fanny Rawlings	Leadville, "	1	.....	.....	.....	.....	.....	.....
Forepaugh	Cripple Creek, "	1	.....	.40	.15	.10	.....	.....
Franklin	" " "	1	.....	.....	.....	.....	.....	.....
Garfield Grouse	" " "	1	.06	.06	.04¾	.05¼	.05¼	216,344
Gold & Globe	" " "	1	.18	.21	.18	.20	.24	.....
Gold Standard	" " "	1	.09¼	.11¼	.10¼	.11¾	.13	25,000
Henrietta	" " "	1	.00 3½	.012	.008	.01⅜	0 .¼	1,1?0,0 0
Isabella	" " "	1	.32	.35	.33	.33	.34	39,900
Jack Pot	" " "	1	.08	.09	.08¾	.07½	.08¼	57,000
Justice	" " "	1	.05¾	.08¼	.06¼	.07½	.08¼	43,000
Keystone	" " "	1	.05¾	.07¼	.05¼	.06	.10	.....
Ladessa	" " "	1	.01⅞	.02¼	.02¼	.02⅛	.03	18,000
Mineral Rock	" " "	1	.08	.10	.08	.09	.....	6,0 0
Mollie Gibson	Aspen, "	5	.45	.50	.41½	.39¾	.47	1,800
Mt. Rosa	Cripple Creek, "	1	.13	.15	.13¾	.13¾	.15	1,500
New Zealand	" " "	1	.06	.07	.06	.07¾	.....	.....
Nugget	" " "	1	.11¾	.15	.10½	.13	.....	.....
Oro Grande	" " "	1	.....	.008	.006½	.006	.006¾	42,000
Peop e's	" " "	1	.....	.07	.05	.6	.....	3,000
Pharmacist	" " "	1	.13¾	.14½	.14½	.16	.18	245,000
Portland	" " "	1	.....	.....	.....	2.01	2.15	.....
Reno	" " "	1	.04¾	.05¾	.04¾	.05	.05¼	110 5 0
Sacramento	" " "	1	.05¾	.07	.05	.05¼	.06¾	.....
Santa Fe	" " "	1	.0 9½	.01¼	.00 9¼	.1⅛	.01⅜	337,500
Smuggler-Aspen	Aspen, "	1	.....	1.20	.90	.90	.95	900
Specimen	Cripple Creek, "	1	.....	.....	.....	.....	.....	.....
Star of the West	" " "	1	.02	.02¾	.02¼	0 3¼	.02¾	34,000
Summit	" " "	1	.....	.....	.....	.....	.....	.....
Tenderfoot	" " "	1	.04¾	.05	.03	.03½	.04	16,000
Union Gold	" " "	1	.....	.26	.24	.....	.25	.....
Union Leasing	" " "	1	.34	.37	.32	.30	.35	6,000
Virginia M. Con	" " "	1	.04¼	.04	.03½	.03¾	.03¾	69 500
Wheel of Fortune	" " "	1	.06 6½	.08 3¾	.07 7½	.7	.01⅜	588,000
Work	" " "	1	.06¾	.10	.08	.09½	.10¼	4,300

*Official quotations Colorado Mining Stock Exchange. Sales: Listed, 6,330,144; unlisted, 1,431,200; total, 7,761,344.

PHILADELPHIA, PA.*

Name of Company.	L'cation.	Par Val'e	Nov. 14. H.	Nov. 14. L.	Nov. 15. H.	Nov. 15. L.	Nov. 16. H.	Nov. 16. L.	Nov. 18. H.	Nov. 18. L.	Nov. 19. H.	Nov. 19. L.	Nov. 20. H.	Nov. 20. L.	Sales
Bethlehem Ir.	Pa.	.....	70	.....	70	.....	70	.....	70	.....	70	.....	70	.....	.....
Bloom. C. & C.	"	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambria Iron.	"	50	50	.....	50½	50	50	49½	50	.....	50	.....	49 88	49½	545
" Receipts	"	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cent. Coal & C.	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
C., O. & Gulf. Vt. Tst Ctfs.	I. T.	50	15½	15¾	15½	15	15¼	15	.....	.....	15	14¾	14.12	.....	1,305
Fl. Top C.L.As.	W.V.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" pref.	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hunt & Br. Top.	Pa.	50	31	30	31½	.....	31	.....	.....	.....	31	.....	31	.....	336
" pref.	"	50	5 3⅜	58	.....	.....	53½	53	53⅜	.....	54	.....	53½	5 3¾	65
Hutchinson C.	"	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" pref.	"	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lehigh C. & N.	"	50	47	46	47	46	47	46	47	46	46¼	46	46¼	46	151
Lehigh Valley	"	50	41¼	41	41	40⅞	41	40½	40½	40⅝	40¼	40	4 3⅜	4 ⅛	3,401
Little Sch'ylkill	"	50	64⅞	.....	.....	.....	63½	.....	.....	.....	69¼	.....	64½	.....	69
Penn Gas Coal	"	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penna. R. R.	"	50	53¾	53¾	5 3⅝	53½	53⅝	53¼	53⅝	53½	53¾	53⅝	53¾	53⅝	1,235
Penna Salt	"	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penna. Steel.	"	.....	40½	.....	44	.....	45½	45	46	45	.....	.....	.....	.....	226
" pref	"	.....	77½	.....	79	75	.....	.....	.....	.....	.....	.....	.....	.....	32
Westmoreld C	"	50	50	.....	50	.....	50	.....	50	.....	50	.....	50	.....	.....
Wyo. Valley C.	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Official quotations Philadelphia Stock Exchange. Total sales, 7,265.

SALT LAKE CITY, UTAH.* Week ending Nov. 15.

Name of Company.†	Par value.	Bid.	Asked.	Actual selling price.	Name of Company.	Par value	Bid.	Asked.	Actual selling price.
Ajax	$10	$0.35	$0.50	$0.50	Daly West	20	$6.25	$6.75	$6.50
Alliance	1	1.30	1.55	1.45	Horn Silver	25	2.10	2.50	2.35
Amer. Nat. Gas	10	.19	.20	.15	Mammoth	25	1.05	1.20	1.15
Anchor	20	2.75	3.10	2.90	Mercur	25	7.00	7.50	7.40
Bogan	1	.15	.40	.25	Morgan	125	.50	.75	.65
Bullion Beck & C.	10	6.25	7.50	7.25	Ontario	100	9.00	10.00	9.00
Cane Springs	5	.....	.85	.....	Rover	10	1.15	1.25	1.25
Centen'l Eureka	50	55.00	60.00	59.00	Silver King	20	14.00	14.50	14.00
Cleveland Con	1	.....	.60	.....	Sunshine	10	3.40	3.60	3.50
Comstock	25	.50	.75	.60	Tetro	1	.....	.25	.10
Dalton	5	.16	.20	.18	Utah	1	1.00	1.25	1.10
Daly	20	6.25	6.75	6.50	Utah Lime	10	3.50	4.25	4.00

* Special Report of James A. Pollock. † All the companies are located in Utah.

ASPEN, COLO.* Week ending Nov. 15.

Name of Company.	Location.	Par value.	Bid.	Asked.	Sales.	Price.
Alta Argent	Aspen, Colo.	$1.00	$0.07½	$0.08	32,000	$0.8
Argentum-Juniata	" "	2 00	.48	.49	21,000	.49
Aspen Contact	" "	5.00	.20	.24	1,000	.24
Aspen Deep Mining	" "	1.00	.07	.07½	4',000	.07
Best Friend	" "	1.00	.04	.04½	700	.0 4½
Bi-Metallic	" "	1.00	.01	.01¾	100	.01½
Bushwhacker	" "	1.00	.04½	.05	2,?00	.05
Caverhill Consolidated	" "	1.00	.20	.20	9,0 0	.20
Della S	" "	5.00	.55	.60	4,000	.60
Gold Valley Placer	" "	1.00	.....	.....	.....	.....
Mineral Farm Consolidated	" "	1.00	.06	.06¼	7,0 0	.06¼
Mollie Gibson	" "	5.00	.41	.42	1,?00	.42
Old Colony (Gold)	Taylor River, "	1.00	2.00	2.00	1,000	2.00
Sheep Mt. T. & M	Crystal, "	1.00	.....	.....	.....	.....
Smuggler	Aspen. "	1.00	1.00	1.25	300	1 25

* Special Report of Arkell, MacMillan & Stewart. Total sales, 120,100.

HELENA MONT.* Week ending Nov. 15.

Name of Company.	Location.	Company's office	Par value.	Bid.	Asked	Shares sold.	Price	Date.
Am. Dev. & M. Co.	Silv. Bow Co, Mont.	Butte, Mont.	$1	$1.50	$2.00	500	$2. 0	Nov.
Bald Butte	L. & Cl'ke " "	Helena "	1	2.?5	3.75	100	3.2?	"
Benton Group	Meagher " "	W. Sph. S. "	5	.15	.25	500	.15	"
Combination	" " "	" " "	10	.50	.55	300	.50	"
Hel'a & Frisco	Shoshone " Id.	Helena, "	5	1.50	2.50	.....	.....	.....
Iron Mountain	Missoula " "	" "	10	.55	.60	8.50	7.5?½	N'vs-15
Merrill G.	Jeffer on " "	Butte "	1	.45	.50	.....	.....	.....
Ontario	DeerLodge " "	Helena "	1	.....	1.00	.....	.....	.....
Piegan	L. & Cl'ke " "	M'lyaville, "	5	.10	.20	.....	.....	.....
Royal Gold	DeerLodge " "	D'r Lodge, "	5	.....	1.00	.....	.....	.....

* Special Report of Samuel K. Davis.

DULUTH, MINN.* Week ending Nov. 16.

Name of Company.	Location.	Company's Office.	Par value.	Bid.	Ask.	Price
Adams Iron	St. Louis Co., Minn	Duluth, Minn	100	$5.00		
Biwabik Mt. Iron	" " "	" " "	100	21.0	$22.50	.....
Lake Superior Con	" " "	" " "	100	16.00	18 00	$16.50
Mesabi Chief	" " "	" " "	100	1.75	2.00	.....
Minnesota Iron	" " "	New York City.	100	70.00	72.50	.....
Mountain Iron	" " "	Duluth, Minn.	100	62.00	68.00	66.00

* Official quotations Duluth Board of Trade.

LONDON. Week ending Nov. 8.

Name of Company.	Country	Product.	Capital stock.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
AMERICANS:				£ s. d.	s.d.		£ s. d.	£ s.d.
Alaska-Mexican	Alaska	Gold	£160,000	1 0 0	0 7.2	Oct., 1895	1 10 0	1 15 0
Alaska Treadwell	"	"	1,?0.0 0	5 0 0	1 6	" "	5 10 0	5 15 0
De Lamar	Idaho	Gold & silver	500,000	1 0 0	1 0	" "	19 6	1 0 6
Elkhorn	Montana	Silver	2?0,000	1 0 0	0 3	July "	4 9	5 3
Harquahala	Arizona	Gold	300.0 0	1 0 0	0 6	Oct. 1894	6 0	6 6
Holcomb Valley	California	"	140,400	5 0	..	..	1 0	1 6
Jay Hawk	Montana	"	288 00	1 0 0	0 6	Dec., 1892	1 0	1 6
Montana	"	Gold & silver	660,000	1 0 0	0 3	Oct, 1895	? 0	? 6
New Guston	Colorado	Silver	110,000	1 0 0	1 0	" 1892	5 0	10 0
Palmarejo	Mexico	Gold & silver	800,000	1 0 0	.....	.....	1 6	2 0
Plumas-Eureka	Colorado	Gold	281,2?0	2 0 0	0 9	Oct., 1895	10 0	12 6
Poorman	Idaho	Gold & silver	230,000	5 0	.....	.....	3 3	3 6
Richmond	Nevada	G'ld, Sil., le'd	?70,000	5 0 0	1 0	Nov., 1894	17 6	1 2 6
Sierra Buttes	California	Gold	245,0.0	2 0 0	0 6	Oct., 1895	10 0	12 6
Springdale	Colorado	"	200,000		4	0 2 Sept., 1894	1 3	1 9
SOUTH AMERICANS:								
Colomb. Hydra'lic	Colomb'a	Gold	75,0?0	1 0 0	1 0	July, 1895	8 9	11 3
Frontino & Bolivia	"	"	140,000	1 0 0	0 6	Oct. "	1 5 0	1 7 6
Tolima, A shares	"	Silver	70,000	5 0 0	10 0	July "	7 15 0	8 5 0
" B "	"	"	30,000	5 0 0	10 0	" "	5 15 0	6 5 0
COPPER STOCKS:								
Anaconda	Montana	Cop. & Sil.	6,000,000	5 0 0	.....	.....	7 0 0	7 5 0
Cape Copper	So. Africa	Copper	600.000	2 0 0	1 3	June, "	2 5 0	2 7 6
" pref.	"	"	150,000	2 0 0	1 3	" "	2 5 0	2 10 0
Copiapo	Chile	"	200,000	3 0 0	1 6	May "	1 16 3	1 18 9
Rio Tinto	Spain	"	3,?40,000	10 0 0	10 0	Nov. "	15 17 6	16 2 6
Tharsis	"	Sulpr & ecp'r	1,?50,000	4 0 0	4 0	April "	4 17 6	5 2 6
AUSTRALIANS:								
Bayley's Reward	Coolg'rdie	Gold	480,000	1 0 0	4 0	Dec., 1894	5 0	6 0
Broken Hill Prop'r.	N. S. Wales	Silver	384,000	8 0	2 0	Oct, 1895	2 2 6	2 5 0
Mt. Morgan Gold	Qu'ns'and	Gold	875,000	17 6	1 0	"	2 15 0	3 0 0
SOUTH AFRICANS:								
British S. Africa Co	So. Africa	Lands & Ex.	2,000,000	1 0 0	.....	July, 1895	5 8 9	5 11 3
City & Suburban	Transvaal	Gold	85 000	4 0 0	10 0	June, 1895	5 5 0	5 10 0
Crown Reef	"	"	?20,000	1 0 0	5 0	July, "	10 12 6	10 17 6
De Beers Con	"	Diamonds	3,9 0,?00	5 0 0	12 6	" "	25 17 6	26 2 6
Ferreira	"	"	9?,000	1 0 0	13 0	" "	16 10 0	17 10 0
Geldenhuis Estate	"	"	200,?00	1 0 0	6 0	" "	4 15 0	5 0 0
Jagersfontein	"	"	1,?0 0,000	10 0 0	10 0	" 1894	9 2 6	9 7 6
Langlaagte Estate	"	Gold	470,000	1 0 0	5 0	" 1895	5 2 6	5 7 6
New Primrose	"	"	278,?50	1 0 0	5 0	" "	5 15 0	6 0 0
Robinson	"	"	2 ?50,000	5 0 0	6 0	June "	10 0 0	10 5 0
Simmer & Jack	"	"	250,000	1 0 0	2 0	Aug. "	25 0 0	26 10 0

PARIS. Week ending Nov. 8.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Prices. Closing.
			Francs.	Fr.	Fr	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	100.00	2,000.00	2,000.00
" " Firminy	"	"	3,000,000	500	85.00	1,6?2.5?	1,6?5.00
" " Five-Lille	"	"	12,000,000	500	35.00	690.00	695.00
" " la Marine	"	"	30,000,000	500	30.00	865.00	865.00
" " Longwy	"	"	.....	500	85.00	614.00	610.00
" " l'Horme	"	"	.....	500	.....	25.00	25.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	40.00	175 00	180.00
Anzin	France	Coal	.....	.....	200.00	4,200.00	4,205.00
Boleo	Lower Cal.	Copper	.....	500	.....	1,325.00	1,?25.00
Bruay	France	Coal	3,0 0,000	400	600.00	17,900.00	17,950.00
Callao	Venezuela	Gold	32,300,000	125	.....	11.75	11.10
Cape Copper	S. Africa	Copper	.....	50	1.?0	56.25	55.10
Champ d'Or	"	Gold	.....	25	.....	60.00	57.50
Courrieres	France	Coal	6 0,000	300	150.00	4,150.00	4,150.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	683.75	685.00
Dombrowa	Russia	Coal	.....	500	.....	605.00	600.00
Dynamite Centrale	France	Explosives	.....	500	25.00	620.00	62 .00
Huanchaca	Bolivia	Silver	.....	125	5.00	1?0.00	105.00
Kebao	Tonquin	Coal	.....	500	.....	240.00	240.00
Langlaagte Estate	S. Africa	Gold	11,?50,000	25	11.25	138.75	140.00
Laurium	Greece	Zinc & lead	16,300,000	500	40.00	6 0.00	600.00
Malfidano	Italy	Zinc	12,?60,000	500	52.50	930.00	935.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	37.50	367.00	365.00
Mokta-el-Hadid	Algeria	Iron	18,?12,500	500	40.00	7?5.0	?55.00
Nickel	N. Caled'nia	Nickel	12,?20,000	500	30.00	120.00	120.00
Penarroya	Spain	Coal, etc.	.....	500	32.50	1,19 .00	1,195.00
Rebecca	Colo'do, U.S.	Gold	.....	.....	.....	25.00	26.50
Rio Tinto	Spain	Copper	81,250,000	250	8.00	444.75	440.00
Robinson	S. Africa	Gold	.....	125	12.50	265.00	253.75
Saint Elie	Fr. Guiana	"	4,?00,000	25	.....	25.75	24.50
Salines de l'Est	France	Salt	.....	500	27.00	310.00	312.50
Tharsis	Spain	Copper	.....	50	6.25	120.00	120.00
Vieille Montagne	Belgium	Zinc	9,000,000	80	30.00	453 75	452.50

MEXICO. Week ending Nov. 15.

Name of Company.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Prices. Closing.
Amistad y Concordia	Hidalgo	9,600	$0.77	....	$20	$18
Angustias	Guanajuato	2,400	?5.00	.....	1,?60	1,275
Arevalo	Hidalgo	.....	10.00	.....	400	405
Asturiana y Anexas	Zacatecas	2,500	10.00	.....	380	380
Bartolome de Medina	Hidalgo	3,0 0	3.00	.....	300	300
Carmen	"	1,100	18.89	.....	850	800
Castellana	Tepic	2,448	3 00	.....	2?0	2?0
Cerro Colorado	Chihuahua	15,000	.....	$1.00	15	15
Cinco Senores	Guanajuato	2,000	30.00	.....	1,190	1,300
Concepcion y Anexas	S. Luis Potosi	2,?00	.....	.....	300	260
El Oro	Guanajuato	500	.....	.....	100	100
Guadalupe	"	10,000	2.00	.....	240	240
Luz de Maravillas	Hidalgo	1,100	.....	.....	350	350
Pabellon	"	1,000	18 81	.....	300	303
Purisima de los Com.	Zacatecas	2,4?0	.....	.....	?0	?0
Real del Monte	Hidalgo	2,554	20.00	.....	1,430	1,400
Rosario y Anexas	Durango	4,?00	.....	.....	110	100
San Francisco	Hidalgo	2,?0 0	6.00	.....	500	500
S. Ped. Chalchihuites	"	1,000	2.00	.....	200	205
San Rafael y An	"	1,300	40.00	.....	1,95 0	1,950
do. free stock	"	1,?0 0	16.00	.....	900	900
Sta. Maria de la Paz	S. Luis Potosi	2,400	....	.....	?00	630
Soledad	Hidalgo	?60	30.00	.....	9 0	900
Sorpresa	"	?60	5.00	.....	600	600
Trinidad	Guanajuato	2,?0 0	8.00	.....	220	260
Tlauzingo	Puebla	2,400	.....	.....	40	40
Union	Hidalgo	2,000	7.00	.....	610	615
Zaragoza	"	1,100	.....	.....	?0	?0
Zomelahuacan (gold)	Vera Cruz	5,000	.....	.....	100	100
Zona Min. de Pozos	Guanajuato	2,400	.....	1.50	100	90

NOTE.—In most Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Prices are in Mexican dollars.

VALPARAISO, CHILE.* Week ending Sept. 28.

Name of Company.	Capital.	Share value N'minal.	Share value Paid up.	Last dividend.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat	$3,?00,000	$100	$100	0¾ per cent.	$42	$42?½	$42?½
Caracoles	315,000	100	100	5 "	.....	50	.....
Descub. de Huantajaya	1,000,000	100	1.0	2 "	25	35	25
Huanchaca de Bolivia	8,0 0,000	100	100	4 .. "	60	62	60
Oruro	800,0.0	1,000	1,000	.....	426	430	425
S. Agustin de Huantajaya	1,500,000	100	100	2½ per cent.	50	55	52½
Todos Santos	2,000,000	100	100	0¾ "	16?½	18?¼	17?½
Nitrate Cos:							
Agua Santa	5,000,000	5 0	2?0	6 "	163	165	163
Antofogasta	2,000,000	200	200	10 "	140	170	184
Union	3,? 0,000	200	100	8 "	76	80	76

* Special Report of Jackson Bros. Values are in Chilean pesos or dollars.

SHANGHAI, CHINA.* Oct. 18.

Name of Company.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Dat.	Last dividend. Amount.	Price.
Jelebu Mg. & Trad	China	45,000	$5	$5	Oct., 1894	$0.25	Taels 2 3
Punjom Mg. Co., Ltd.	"	58,859	4	3¾	.....	.....	" 4.3
do. pref	"	28,5 9	1	1	.....	.....	" 1.0
RaubA'lian G. Mg. Co.	"	200,000	£1	18s 10d.	Dec., 1893	10¼d.	" 2.9
Sheridan Con. Mg. Co.	Colorado, U.S	20,0.0	Taels 100	Taels 100	.....	.....	" 2.50

* Special Report of J. P. Bissett & Co. The prices quoted are in Shanghai taels.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par val	Assessments. Total Levied	Assessments. Date and amount of last.			Dividends. Total paid.	Dividends. Date & amount of last.		
1	Adams, s. L.	Colo..	$1,500,000	150,000	$10	*	.....	...	.....	$693,500	Oct..	'95	.04
2	Alaska-Treadwell, g.	Al'ska	5,000,000	200,000	25	.....	.....	...	.....	2,224,000	Apr..	1895	.37½
3	Alice, s.	Mont.	10,000,000	400,000	25	*	.....	...	.....	975,000	Nov.	1891	.06¼
4	Amador, c.	Cal.	1,250,000	250,000	5	*	.....	...	.....	81,250	Aug.	1890	.12½
5	American, c.	Colo..	5,000,000	500,000	10	*	.....	...	.....	225,000	Mar.	1892	.05
6	American Belle, s. & C.	Colo.	2,000,000	400,000	5	*	.....	...	.....	50,000	Apr.	1891	.12½
7	Americ'n & Wattie, g. &	Colo.	.....	4 0,000	...	.....	.....	...	.....	178,400	Mar.	1892	.05
8	Argentum-Juniata..	Colo..	2,000,000	1,300,000	2	.....	.....	...	.....	156,000	Oct .	1895	.03
9	Assanic, c.	Mich..	1,000,000	1,000,000	1	*	.....	...	.....	20,000	Mar.	1892	.01
10	Argyle, g.	Colo..	2,000,000	200,000	10	*	.....	...	.....	900,000	July.	1894	.10
11	Aspen Mg. & S., s. L.	Colo..	2,500,000	100,000	25	.....	.....	...	.....	650,000	Feb..	1893	2.00
12	Aurora, L.	Mich..	250,000	50,000	5	*	.....	...	.....	37,500	Mar.	1890	.25
13	Bad cer, s	Ont..	250,000	250,000	1	.....	.....	...	.....	382,000	Jan.	1895	.05
14	Bald Butte	Mont	600,000	600,000	1	*	.....	...	.....	98,510	Oct.,	1895	.00½
15	Bangkok-C. Bell, c. s. L	Colo..	1,000,000	1,000,000	1	.....	.....	...	.....	67,500	Dec..	1891	.00¾
16	Bates Hunter, s. g...	Colo..	500,000	100,000	5	*	.....	...	.....	159,113	Oct...	1895	.04
17	Belden, F. E., m.	N. H..	10,000,000	100,000	100	230,271	Sept	1893	.10	300,000	Dec..	1879	.25
18	Belle Isle, s.	Nev..	10,400,000	104,000	100	3,262,930	Nov.	1893	.20	15,397,230	Apr..	1876	1.00
19	Belcher, s. g.	Nev..	1,250,000	125,000	10	120,000	Dec..	1889	.25	200,000	Jan..	1890	.10
20	Bellevue, Idaho, s. L.	Idaho	1,000,000	1,000,000	1	*	.....	...	.....	90,000	Feb..	1892	.01
21	Best Friend	Colo.	5,000,000	200,000	25	.....	.....	...	.....	1,630,000	June	1893	.10
22	Bi-Metallic, s. g.	Mont.	10,000,000	100,000	100	714,990	July	1893	.15	1,677,572	Dec..	1894	.25
23	Bodie Con., g. L.	Cal.	2,500,000	250,000	10	*	.....	...	.....	520,000	June	1886	.15
24	Boston & Mont., c. s.	Mont.	3,750,000	150,000	25	*	.....	...	.....	3,075,000	Nov..	1895	4.00
25	Brotherton, L.	Mich.	2,000,000	80,000	25	*	.....	...	.....	120,000	Mar..	1895	.50
26	Bulwer, c.	Cal..	10,000,000	100,000	10	155,000	July	1893	.15	190,000	Oct..	1892	.05½
27	Bunker Hill & S. s. L.	Idaho	9,000,000	900,000	10	*	.....	...	.....	150,000	Oct..	1885	.06
28	Caledonia, c.	Dak..	10,000,000	100,000	100	505,000	May.	1885	.15	192,000	Oct..	1890	.08½
29	Calumet & Hecla c.,	Mich..	4,500,000	100,000	25	1,200,000	.....	...	.....	43,850,000	Oct..	1895	5.00
30	Centen'l-Eureka, s. L.	Utah.	1,500,000	30,000	50	30,000	Mar.	1888	1.00	1,380,000	Nov..	1895	1 00
31	Central, c.	Mich..	500,000	20,000	25	100,000	Oct..	1861	.65	1,970,100	Feb..	1891	1 00
32	Champion, c	Cali..	340,000	34,000	10	150,000	.....	...	.....	216,000	Aug..	1895	.10
33	Chrysolite, s. L.	Colo..	10,000,000	200,000	50	*	.....	...	.....	1,650,000	Dec..	1884	.25
34	Coeur D'Alene, s. L.	Idaho	5,000,000	500,000	10	.....	.....	...	.....	340,000	June	1893	.06
35	Colorado Central, s. L.	Colo..	2,700,000	275,000	10	*	.....	...	.....	502,561	Apr..	1893	.05
36	Commonwealth, s..	Nev..	10,000,000	100,000	100	200,000	Nov.	1893	.10	30,000	Nov..	1890	.20
37	Confidence, s. L.	Nev...	2,496,000	24,960	100	1,589,550	Aug..	1892	.50	277,680	Apr..	1889	1.00
38	‡Cons. Cal. & Va., s. g	Nev...	21,600,000	216,000	100	216,000	Dec..	1892	.50	3,952,800	Mar	1895	25
39	Contention, s.	Aris..	12,500,000	250,000	50	.....	.....	...	.....	2,637,500	Aug..	1892	.20
40	Cook's Peak, s.	N. M..	2,000,000	200,000	10	.....	.....	...	.....	119,532	Nov	1892	.05
41	Cop. Queen Con., c.	Aris..	2,000,000	200,000	10	.....	.....	...	.....	1,910,000	June.	1895	.25
42	Coptis	Nev..	10,000,000	100,000	100	.....	.....	...	.....	68,000	Feb..	1895	.01
43	Cortes, s.	Nev.	1,500,000	300,000	5	*	.....	...	.....	735,000	Feb..	1893	.15
44	Crescent, s. L. g.	Utah.	15,000,000	600,000	25	60,000	Oct	992	.10	288,000	Oct..	1888	.08
45	Crown Point, s. s.	Nev...	10,000,000	100,000	100	2,750,000	June	1893	.25	11,898,000	Jan..	1875	.00
46	Daly, s. L.	Utah.	3,000,000	150,000	20	*	.....	...	.....	2,880,000	May..	1893	.25
47	‡Deadwood-Terra, c.	Dak..	5,000,000	200,000	25	*	.....	...	.....	1,140,000	Sept..	1892	.06
48	DeLamar, c. s.	Idaho al..	2,000,000	400,000	5	*	.....	...	.....	1,722,000	Oct..	1895	.24
49	Derbec B. Grav., c.	Nev..	10,000,000	100,000	100	100,000	Sept.	1892	.10	260,000	Mar	1891	.05
50	Dexter, g. s	Mont.	1,000,000	100,000	10	.....	.....	...	.....	245,000	July	1893	.25
51	Elkhorn, s.	Colo..	1,000,000	200,000	5	*	.....	...	.....	1,324,689	May	1895	.12½
52	Elkton	Colo..	500,000	500,000	1	*	.....	...	.....	60,000	Dec.	1894	.01
53	Enterprise, s.	Nev..	1,000,000	50,000	20	550,000	June	1889	.50	850,000	June.	1893	.25
54	Eureka Con., s. L. G.	Utah.	1,000,000	10,000	10	*	.....	...	.....	5,112,500	Jan .	1892	.25
55	Eureka Hill, g. s. L.	Colo..	500,000	50,000	10	*	.....	...	.....	1,500,000	Jan..	1891	.04
56	Evening Star, s. L.	Dak..	10,000,000	100,000	100	200,000	Nov..	1878	1.00	1,437,500	Dec.	1889	.25
57	Father de Smet, c.	Mich..	1,000,000	40,000	25	320,000	June	1867	2.50	1,125,000	Dec..	1886	.20
58	Franklin, c.	Mont.	1,000,000	100,000	10	.....	.....	...	.....	10,000	June.	1891	10
59	Glengarry	Colo..	750,000	750,000	1	.....	.....	...	.....	1,240,000	Jan..	1894	2.00
60	Gold & Globe, c.	Nev...	10,800,000	108,000	100	4,688,400	Oct .	1893	.10	9,375	Mar..	1895	.00¼
61	Gould & Curry, s. c.	Nev...	10,000,000	100,000	100	785,000	Jan..	1890	.50	3,826,800	Oct..	1870	10.00
62	Grand Prize, s.	Mont.	10,000,000	400,000	25	.....	.....	...	.....	495,000	Mar.	1894	.25
63	Granite Mountain, s.	Cal..	5,000,000	50,000	100	50,526	.....	1889	.15	12,120,000	July.	1892	.20
64	Great Western, L. Q.	Nev...	11,200,000	112,000	100	5,646,800	June	1892	.50	988,866	Nov	1893	.25
65	Hale & Norcross, c. s.	Mont.	1,500,000	30,000	50	*	.....	...	.....	1,822,000	Aug.	1888	.50
66	Hecla Con., s. c. L. C.	Mont.	3,315,000	663,000	5	.....	.....	...	.....	2,115,000	Aug..	1895	.50
67	Hel'a Mg. & Red, s. L. c.	Idaho	2,500,000	500,000	5	.....	.....	...	.....	197,970	July.	1886	.06
68	Helena & Frisco, s. L.	Mont.	1,000,000	200,000	5	.....	.....	...	.....	280,000	Feb..	'892	.02
69	Helena & Victor.	Nev...	10,000,000	100,000	100	345,000	Mar.	1890	.25	80,000	May	1892	.05
70	¶Holmes, s.	Dak..	12,500,000	125,000	100	200,000	July.	1878	1.00	5,618,750	Oct..	1895	.25
71	Homestake, c.	Mont.	1,000,000	100,000	10	*	.....	...	.....	552,250	Jan..	1895	.10
72	Hope, s.	Utah.	10,000,000	400,000	25	*	.....	...	.....	5,137,500	Apr..	1895	.12½
73	Horn-Silver, s. L.	Cal..	310,000	3,100	100	*	.....	...	.....	5,489,000	Sept.	1893	2.50
74	Idaho, c.	N. M..	100,000	100,000	1	*	.....	...	.....	45,000	Apr..	1889	.20
75	Illinois, s.	Mont.	5,000,000	500,000	10	*	.....	...	.....	385,000	Aug..	1895	.02
76	Iron Mountain, s.	Colo..	10,000,000	500,000	20	*	.....	...	.....	2,500,000	Apr..	1889	.20
77	Iron-Silver, s. L.	Nev..	5,000,000	50,000	100	247,500	Mar..	1893	.20	80,000	Feb.	1895	.14
78	Jackson, c. s.	Mich..	.....	40,000	25	190,000	Oct..	1887	1.00	80,000	Jan..	1890	2.00
79	Kearsarge, c.	Mich..	10,000,000	100,000	100	.....	.....	...	.....	2,734,000	Aug..	1895	.48
80	Kennedy	Cal...	2,100,000	84,000	...	.....	.....	...	.....	.....	.....	...	.....
81	Lake Superior, L.	Mich..	4,800,000	400,000	10	*	.....	...	.....	316,000	Feb..	1893	.08
82	Leadville Con., s. L.	Colo.	4,000,000	40,000	100	*	.....	...	.....	652,200	July.	1893	.90
83	Lexington, c. s.	Mont.	10,000,000	200,000	50	*	.....	...	.....	820,000	Dec..	1890	.05
84	Little Chief, s. L.	Colo..	3,000,000	600,000	5	.....	.....	...	.....	708,900	Apr..	1895	.25
85	Maid of Erin	Utah	10,000,000	400,000	250	110,000	.....	1882	.25	1,040,000	Dec...	1891	.10
86	Mammoth, s. L. c.	Utah.	3,000,000	300,000	10	.....	.....	...	.....	117,000	Apr..	1892	.03
87	Maxfield	Cal...	1,200,000	60,000	20	.....	.....	...	.....	242,000	Aug..	1895	.10
88	Mayflower, D. gravel	Mex..	1,000,000	100,000	10	.....	.....	...	.....	350,000	Dec..	1890	.50
89	Minas Prietas, g. s.	Mich..	1,000,000	40,000	25	420,000	April	.88	1.00	1,820,000	Mar..	1876	
90	Minnesota, c.	Minn.	16,500,000	165,000	100	.....	.....	...	.....	2,745,000	Apr..	1893	1 50
91	Minnesota Iron, L.	Colo..	5,000,000	1,000,000	5	19 500	Jan..	1891	.01	4,080,000	Jan..	1895	.05
92	Mollie Gibson, s.	S. Dak	2,500,000	250,000	10	.....	.....	...	.....	45,000	Oct..	1890	.03
93	Monitor, g.	Cal...	5,000,000	50,000	100	797,500	Feb..	1893	.25	12,500	Mar	1886	.25
94	Mono, g.	Mont.	3,300,000	660,000	5	*	.....	...	.....	2,701,775	Jan.	1895	12½
95	Montana, Lt., c. s.	Colo..	600,000	600,000	1	.....	.....	...	.....	72,000	Nov..	1894	.02
96	Moose	Colo..	1,000,000	100,000	10	.....	.....	...	.....	1,025,000	Dec..	1891	.4
97	Morning Star, s. L.	Cal..	240,000	2,400	100	*	.....	...	.....	446,300	Oct..	1895	7.00
98	Morning Star Drift, g	Mont.	2,000,000	400,000	5	*	.....	...	.....	460,000	July.	1894	.05
99	Moulton, s. g.	Nev..	5,000,000	50,000	100	137,500	June	1880	2.00	225,000	Nov	1893	.30
100	Mt. Diablo, s.	Colo..	1,000,000	1,000,000	1	.....	.....	...	.....	10,000	Jan..	1895	.10
101	Mt. Rosa, g	Cal...	700,000	100,000	7	.....	.....	...	.....	740,000	Oct..	1895	.20
102	Napa, q.	Nev..	10,000,000	100,000	10	538,714	Sept.	1893	.10	226,111	Apr..	1889	.10
103	Navajo, c. s.	Colo..	550,000	110,000	5	*	.....	...	.....	1,877,500	Apr..	1892	.75
104	New Guston, s.	Cal...	1,000,000	100,000	10	.....	.....	...	.....	20,000	July..	1891	.05
105	North Banner Con.	Nev..	10,000,000	100,000	10	90,000	Jan..	1893	.10	25,000	June	1891	.25
106	North Commonw'th	N. C	300,000	120,000	2½	*	.....	...	.....	30,000	Dec.	1885	.06½
107	N. Hoover Hill, g. s.	Nev..	10,000,000	100,000	100	513,075	April	1893	.10	230,000	May	1888	.50
108	North Belle Isle, s.	Cal..	1,000,000	100,000	10	20,000	.....	1885	.02	450 000	June	1893	.50
109	North Star, g.		1,000,000	1,000,000	1	*	.....	...	.....	10,000	Jan..	1895	.00¼
110	Nugget, c.	Cal...	2,400,000	24,000	100	.....	.....	...	.....	97,200	July..	1894	.15
111	Omaha Cons., g.	Utah	15,000,000	150,000	100	.....	.....	...	.....	18,175,000	Oct..	1892	.50
112	Ontario, s. L.	Nev..	10,000,000	100,000	100	4,391,040	July	1893	.25	1,595,800	Jan	1890	1.00
113	Ophir, g. s.	Mich..	1,250,000	50,000	25	480,000	April	1876	1.60	1,947,500	June	1895	1.00
114	Osceola, c.	Cal...	2,000,000	30,000	100	.....	.....	...	.....	422,500	July.	1893	1.00
115	Pacific Coast, s.	Mont.	2,300,000	23,000	10	.....	.....	...	.....	1,569,000	June	1893	.10
116	Parrot, c.	Utah.	10,000,000	10,025	100	.....	.....	...	.....	17,500	July..	1891	.75
117	Pet'o	Cal...	1,200,000	1,200,000	1	.....	.....	...	.....	80,000	June.	1893	.01
118	Pharmacist, g.	Colo.	1 406,250	140,600	50	*	.....	...	.....	2,696,295	Oct..	1893	.18
119	Plumas Eureka, s.	Cal..	5,000,000	100,000	50	*	.....	...	.....	2,280,000	Feb.	1888	.40
120	Plymouth Con., g.	Idaho	875,000	900,000	1 25	*	.....	...	.....	68,260	Sept.	1892	.15
121	Poorman, g. s.	Colo..	3,000,000	3,000,000	1	*	.....	...	.....	388,500	Oct..	1895	.02
122	Portland, c.	Cal...	4,300,000	43,000	0	.....	.....	...	.....	1,823,911	June	1891	1.25
123	Quicksilver, pref., q.	Cal..	5,700,000	57,000	100	.....	.....	...	.....	643,587	July.	1893	.40
124	" com., q.	Mich..	1,250,000	50,000	105	200,000	Dec..	1882	.....	7,690,000	Aug..	1895	4.00
125	Quincy, c.	Idaho	1.000,000	200,000	25	.....	.....	...	.....	153,000	Dec..	1891	.10
126	Red Cloud	S. Dak	1,250,000	250,000	5	.....	.....	...	.....	20,000	Aug..	1891	.03
127	Retriever, L.	Colo..	300,000	300,000	1	*	.....	...	.....	50,250	Apr..	1892	.01½
128	Rialto, g.	Nev..	1,350,000	54,000	5	*	.....	...	.....	4,386,780	Sept.	1893	.25
129	Richmond, s. L.	Colo..	5,000,000	1,000,000	25	.....	.....	...	.....	325,000	Nov..	1894	.02½
130	Rico-Aspen	Mich..	1,250,000	50,000	5	219,939	Mar.	1886	.50	99,785	Feb..	1880	.50
131	Ridge, c.	Colo..	10,000,000	200,000	20	*	.....	...	.....	585,000	Mar	1886	.06
132	Robinson Con., s. L.	Nev..	11,200,000	112,000	50	6,966,000	June	1893	.25	4,460,000	June	1869	3.00
133	Savage, s.	Cal..	2,225,000	122,500	10	.....	.....	...	.....	1,559,933	Oct..	1893	.12½
134	Sierra Buttes, c.	Nev..	10,000,000	100,000	10	6,521,910	Aug.	1893	.20	102,000	Jan..	1871	1.00
135	Sierra Nevada, s. g.	Colo..	5,600,000	500,000	100	.....	.....	...	.....	270,000	Apr..	1895	.10
136	Silver Cord, g. L. c.	Utah.	10,000,000	100,000	10	97,479	Aug..	1892	.25	1,380,000	N.v..	1895	.25
137	Silver King, s.	N. M..	500,000	500,000	101	.....	.....	...	.....	308,000	Dec..	1891	4.05
138	Silver Mg. of L. V., s. L.	Colo..	5,000,000	250,000	0	*	.....	...	.....	8,225,000	Oct..	1895	.10
139	Small Hopes Con., s.	Cal...	10,000,000	100,000	20	100,000	June	1890	.50	8,771,159	June.	1895	.10
140	Standard, c. s.	Colo..	600,000	60,000	100	*	.....	...	.....	39,000	Sept.	1892	.10
141	Swansea, g. s.	Mich..	1,250,000	50,000	15	520,000	April	1885	3.00	4,270,000	June.	1894	4.00
142	Tamarack, c.	Colo..	500,000	500,000	21	*	.....	...	.....	37,500	Apr..	1894	.00½
143	Trinity Riv'r Hydr., g	Colo..	1,250,000	1,250,000	1	*	.....	...	.....	27,740	May..	1895	.01
144	Union	Aris..	3,000,000	300,000	0	*	.....	...	.....	562,500	Dec..	1893	.25
145	United Verde, c.	Colo..	1,000,000	200,000	15	.....	.....	...	.....	415,000	Oct..	1895	.10
146	Victor, g	Colo..	600,000	600.00	1	*	.....	...	.....	6,900	June.	1895	.05
147	Victor L. & M. Co., g.	Colo..	2,000,000	200,000	1	.....	.....	...	.....	20,000	Dec..	1889	05
148	Ward Con., s.	Cal..	60,000	30,000	2	22,500	May.	1891	.10	106,000	Aug..	1895	.10
149	W. Y. O. D.	Col o	1,300,000	260,000	5	.....	July.	1893	.25	520,000	July.	1891	.25
150	Yankee Girl,	Nev.	12,000,000	120,000	100	.....	.....	...	.....	2,184,000	Aug..	1871	1.50

NON-DIVIDEND-PAYING MINES

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total levied.	Assessments. Date and amt of last.			
1	Ajax, G. s. L.	Utah.	$3,000,000	300,000	$10	$15,000	Mar.	1895	$2	
2	Alliance, s. g.	Utah.	100,000	100,000	1	120,000	Feb..	1891	.10	
3	Alloues, c.	Mich.	2,000,000	80,000	25	1,424,987	Oct..	1891	.10	
4	Alpha Con., G. s.	Nev..	3,000,000	30,000	100	209.000	Sept.	1892	.10	
5	Alta, s.	Nev..	10,080,000	100,800	100	3,369,880	Jan.	1892	.05	
6	American Flag, s.	Colo..	1,250,000	125,000	1	300,000	June	1887	.....	
7	Anchor, s. L. G.	Utah.	3,000,000	150,000	5	560,000	July.	1893	.15	
8	Barcelona, g.	Nev..	5,000,000	200,000	5	*	.....	...	.....	
9	Belmont, g.	Cal..	500,000	500,000	100	*	.....	...	.....	
10	Belmont, s.	Nev..	5,000,000	50,000	100	735,000	April	1884	.10	
11	Best & Belcher, s. G.	Nev..	10,080,000	100,800	10	2,405,275	Aug..	1892	.25	
12	Black Oak, g.	Cal..	3,000,000	300,000	100	*	.....	...	.....	
13	Brownlow, g.	Colo..	250,000	250,000	5	.....	.....	...	.....	
14	Brunswick, g.	Cal..	2,000,000	400,000	2	.....	.....	...	.....	
15	Bullion, s. G.	Nev.	10,000,000	100,000	100	2,890,000	Aug.	1892	.25	
16	Butte & Boston, c. s.	Mont.	5,000,000	200,000	10	.....	.....	...	.....	
17	Butte Queen, g.	Cal..	1,000,000	100,000	1	6,000	Jan..	1892	.....	
18	Calaveras, g.	Cal..	500,000	500,000	5	.....	.....	...	.....	
19	Calaveras Con., g.	Cal..	800,000	160,000	10	.....	.....	...	.....	
20	California, g.	Cal..	1,000,000	100,000	5	9,000	Mar..	1892	.....	
21	California Con. L. Q.	Cal..	2,250,000	450,000	10	.....	.....	...	.....	
22	Challenge Con., g. s.	Nev..	5,000,000	50,000	10	.....	.....	...	.....	
23	Chollar, s. g.	Nev..	11,200,000	112,000	...	2,2:2 000	May..	1895	.50	
24	Colchis, s. g.	N. M..	500,000	150,000	5	.....	.....	...	.....	
25	Colorado, s.	Colo..	1,625,000	325,000	1	.....	.....	...	.....	
26	Comstock, s.	Utah.	1,250,000	250,000	100	.....	.....	...	.....	
27	Comstock Tun.	Nev..	10,000,000	100,000	100	35,000	Mar.	1887	.10	
28	Con. Imperial, g. s.	Nev..	5,000,000	50,000	50	2,062,500	Jan..	1892	.25	
29	Con. New York, s. g.	Nev..	5,000,000	100,000	100	110,000	Mar..	1892	.10	
30	Con. Pacific, g.	Cal..	6,000,000	60,000	10	198,000	June	1890	.10	
31	Crescent, s. L.	Colo..	3,000,000	300,000	100	*	.....	...	.....	
32	Crocker, s.	Aris..	10,000,000	100,000	1	165,000	Aug.	1892	.06	
33	Crowell, g.	N. C..	500,000	500,000	1	.....	.....	...	.....	
34	Dahlonega, g.	Ga....	250,000	250,000	10	*	.....	...	.....	
35	Decatur, s.	Colo..	1,500,000	300,000	...	.....	.....	...	.....	
36	Denver City s.	Colo..	5,000,000	500,000	11	*	.....	...	.....	
37	Denver Gold, g.	Colo..	300,000	60,000	5	.....	.....	...	.....	
38	Dickens-Custer, s.	Idaho	2,100,000	420,000	5	*	.....	...	.....	
39	Durango, g.	Colo..	500,000	500,000	1	*	.....	...	.....	
40	El Dorado, s.	Cal..	1,000,000	250,000	4	*	.....	...	.....	
41	Emma, s	Utah.	625,000	500,000	125	.....	.....	...	.....	
42	Emmons, s. L.	Colo.	2,000,000	2 000,000	1	.....	.....	...	.....	
43	Empire, s.	Utah.	10,000,000	100,000	100	.....	.....	...	.....	
44	Eureka Tunnel, s. L.	Nev...	10,000,000	100,000	100	*	.....	...	.....	
45	Exchequer, s. g.	Nev...	10,000,000	100,000	100	940,000	Jan..	1892	.25	
46	Found Treasure, g. s.	Nev...	10,000,000	100,000	'00	180,500	Jan..	1892	.50	
47	Gogebic I. Syn., L.	Wis..	5,600,000	200,000	25	.....	.....	...	.....	
48	Gold Cup, s.	Colo..	500,000	500,000	1	*	.....	...	.....	
49	Golden Era, s.	Mont.	1,000,000	200,000	10	*	.....	...	.....	
50	Gold Flat, g.	Cal	1,000,000	100,000	10	5,000	Mar..	1892	.05	
51	Gold Rock, g.	Cal..	1,000,000	500,000	2	.....	.....	...	.....	
52	Golden Feather Ch. g	Cal..	900,000	180,000	5	.....	.....	...	.....	
53	Goodyear G. s. L.	Monta	1,000,000	200,000	5	13,000	Feb..	1892	.01	
54	Grand Duke, s.	Colo..	800,000	80,000	10	.....	.....	...	.....	
55	Gregory Con., g.	Mont.	3,000,000	300,000	10	.....	.....	...	.....	
56	Harlem M. & M. Co., g.	Cal..	1,000,000	200,000	5	.....	.....	...	.....	
57	Hartery Con., g.	Cal..	1,000,000	100,000	10	22,000	Oct..	1890	.05	
58	Hartshorn, g. s. L.	S. Dak	1,250,000	250,000	5	8 750	Sept.	1891	.00¼	
59	Head Cent. & Tr., s. g	Aris..	10,000,000	100,000	100	16,981	Mar..	1892	.03	
60	Hector, g.	Colo..	1,500,000	300,000	5	45,000	Jan..	1889	.15	
61	Himalays, g. s. L.	Utah.	1,800,000	80,000	10	12,800	Oct..	1892	.00¼	
62	Holywood	Cal...	200,000	100,000	2	.....	.....	...	.....	
63	Huron, c.	Idaho	1,000,000	40,000	25	280,000	May.	1887	3.00	
64	Idaho, g. s	Colo.	250,000	250,000	5	.....	.....	...	.....	
65	Ingalls, g	Wis..	100,000	20,000	5	.....	.....	...	.....	
66	Ironton, L.	Mich..	1,000,000	40,000	25	.....	.....	...	.....	
67	Iroquois, c.	Nev..	1,250,000	50,000	25	.....	.....	...	.....	
68	Kentuck Con.	Nev..	10,500,000	105,000	00	57,750	July	1892	.10	
69	Julia Con., g. s.	Nev...	11,000,000	110,000	100	1,463,000	Jan..	1889	.10	
70	Justice, g. s. c.	Colo.	500,000	500,000	1	*	.....	...	.....	
71	Lacrosse, g.	Colo..	1,000,000	100,000	10	*	.....	...	.....	
72	Little Josephine, s.	Colo..	260,000	50,000	5	.....	.....	...	.....	
73	Little Pittsburg, G. s.	Utah.	4,000,000	400,000	10	4,000	Mar..	1892	.....	
74	Lone Star Cons., g.	Cal..	500,000	500,000	1	10,000	April	1892	2